Strengthening America's Hunting Heritage and Wildlife Conservation in the 21st Century: Challenges and Opportunities

Sporting Conservation Council

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Preface

"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value."

—Theodore Roosevelt, 1910

The North American continent contains a vast array of wildlife species and habitats. This diversity includes species as physically varied as a 1,500-pound moose and a 1.5-ounce mouse. Habitats range from coastal marshes to alpine meadows, prairie grasslands to desert shrublands, northern hardwood forests to conifer-covered mountains. Throughout most of the continent, the diversity of wildlife is rivaled only by its abundance. Wildlife and associated habitats drive economic, ecological, cultural, and social benefits that have and continue to shape our nation. Unfortunately, most Americans are unaware of the efforts to sustain our rich wildlife legacy. Many believe that wildlife will survive best without any form of human intervention. The history of conservation contradicts that false belief.

The wildlife species that we enjoy today do not exist by accident; rather, they grace this land because of the dedicated work of millions of individuals and hundreds of organizations over more than 100 years. Two centuries of settlement and development of our nation's lands and waters, unregulated market hunting, and a belief that wildlife was an impediment to and an unlimited food source for civilization devastated wildlife populations and their habitats across the continent. The unrestrained slaughter of the American bison and unsustainable forest, rangeland, and agricultural land practices in the late 1800s motivated a clarion call from individuals like George Bird Grinnell, Gifford Pinchot, Theodore Roosevelt, and others to take clear and decisive action. In response, the nation's hunters and conservationists established new organizations dedicated solely to protect and conserve wildlife. The Boone and Crockett Club, founded in 1887, was the first national conservation organization. Soon after, other organizations and individuals added their voices to the call for conservation. This citizen-driven conservation movement ultimately led to the development of treaties, conventions, laws, regulations, and protections for wildlife and their habitat.

Our young nation's wildlife policy evolved from an individually owned, opportunistic, unrestrained, domination-minded approach to a public trust, democratic, sustainable use, and conservation-minded approach. This evolution was captured in seven core principles that evolved over time and constitute the foundation of what we now call the North American Model of Wildlife Conservation. As described herein, the North American Model has been extremely successful in driving conservation efforts continent-wide. At the heart of the North American Model are citizens, hunter conservationists who serve as the stewards for all wildlife. Hunters have successfully campaigned for a regulatory framework for access, opportunity, and use of wildlife while providing the majority of funding to administer state and federal government regulation. The American public is the beneficiary of this altruistic approach, one that manages all wildlife in trust for the public.

The history of the North American Model and the conservation movement has been punctuated by noteworthy and critical events that were responses to the wildlife conservation challenges of

their times. In 1908, President Theodore Roosevelt called on the nation's governors, industrialists, politicians, and conservation leaders to confront the unchecked and widespread natural resource exploitation that dominated the landscape of the United States. The Conference of Governors, which was held at the White House, was in large part the creation of Gifford Pinchot, then the Chief Forester of the United States. This conference was a seminal event in conservation history. It provided notice to our nation's political and business leaders that conservation was essential for the survival of our nation's economy and, in Roosevelt's august opinion, its morality.

Twenty two years later, in 1930, Aldo Leopold presented the first American Game Policy at the American Game Conference, now the North American Wildlife and Natural Resources Conference. The Policy was prompted by the recognition that the existing approach to wildlife conservation, primarily involving restrictions on take of wildlife, had not succeeded in stemming the declines in wildlife populations. The Policy established a focus on habitat and wildlife restoration, with equitable and permanent funding, as well as the establishment of the wildlife management profession. Outcomes of this effort included improved resource agency organization, university wildlife programs, the formal establishment of a wildlife management profession, and permanent funding for state wildlife agencies. This permanent funding exists today in the form of hunting and fishing license and permit revenues and as the Wildlife and Sport Fish Restoration Programs, where federal excise taxes paid by firearm, ammunition, archery, and fishing equipment manufacturers along with the federal tax on motor boat fuel, are allocated to every state and territorial fish and wildlife agency.

In 1971, the wildlife profession coalesced to refine and expand the 1930 Policy as the North American Wildlife Policy, which was presented at the 1973 North American Wildlife and Natural Resources Conference in Washington, DC. Durwood Allen, a respected wildlife university professor, provided the leadership to address issues confronting wildlife conservation, including the continued expansion of the human population, increased resource consumption, recreational use of fish and wildlife, endangered species, habitat management, and multiple-use policies. The 1973 Policy set the stage for efforts to sustain our hunting heritage, focus on nongame and game species, establish international agreements to support wildlife conservation, provide incentives for private landowners for wildlife habitat management, enhance range management and wetland protection, and expand public outreach and conservation education.

The events in 1908, 1930, and 1971 all addressed the same general wildlife conservation challenge, the need for increased conservation efforts in response to a demand for wildlife resources that exceeded the supply. Today a very different challenge has emerged. The demand has declined due to declining hunter participation rates, and the attendant conservation funding has declined; however, habitat loss continues to threaten conservation efforts. These factors place the North American Model and all its wildlife conservation achievements at unprecedented risk.

In response to this great challenge of our time, in August 2007, President George W. Bush signed Executive Order 13443 entitled "Facilitation of Hunting Heritage and Wildlife Conservation." The purpose of this Executive Order was to direct selected federal agencies to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat. Section 3 of the Executive Order called for a conference to "facilitate the exchange of information and advice relating to the means for achieving the goals of this order."

During the fall of 2007, in response to the Executive Order and in cooperation with the Chairman of the Council on Environmental Quality; the Departments of Agriculture and the Interior; the American Wildlife Conservation Partners together with other conservation organizations; the Sporting Conservation Council, a federal advisory committee; and state wildlife agencies identified eight major issues confronting wildlife conservation and our hunting heritage. These challenges of our times were identified for further examination and action:

- The North American Model of Wildlife Conservation;
- Federal, State, and Tribal Coordination;
- Wildlife Habitat Conservation;
- Oil and Gas Development and Wildlife Conservation;
- Climate Change and Wildlife Effects;
- Funding the North American Model of Wildlife Conservation in the United States;
- Preserving the Tradition of Hunting: Access to Public and Private Lands; and
- Preserving the Tradition of Hunting: Education, Recruitment, and Retention.

In April 2008, many of the nation's leading conservationists met in Denver, Colorado, to prepare formal white papers describing the current technical challenges and opportunities associated with each of the eight issues identified. These technical reviews were then presented at a policy review session conducted in June 2008 in Washington, DC. This session included staff from the executive and legislative branches of the federal government, as well as directors from numerous state fish and wildlife agencies. The culmination of the technical and policy development recommendations was an open forum for discussion at the White House Conference on North American Wildlife Policy held in October 2008 in Reno, Nevada. Based on the collective efforts of these three forums, the Administration, in concert with the Sporting Conservation Council, has developed a dynamic 10-year action plan to direct federal agency activity, with state agency support, to enhance our nation's hunting heritage and wildlife conservation efforts.

The white papers included in this volume are the result of this lengthy deliberative process. These papers present the views of individuals and organizations representing millions of American citizens who recognize and value our continent's tremendous wildlife diversity and abundance. The papers also inform the American public about the history of wildlife conservation and the necessary role that humans have and must continue to play.

As did Roosevelt, Leopold, and Allen, we present our best collective attempt to address the major national issues and challenges currently facing our hunting heritage and wildlife conservation. We hope that the identified goals, challenges, and opportunities herein will help guide future policy makers at all branches and levels of federal, state, provincial, and tribal governments to ensure that the lives of future generations of Americans will continue to be enriched by an abundance and diversity of wildlife.

Sporting Conservation Council

December 30, 2008

Executive Summary

Introduction

The Sporting Conservation Council (SCC) was created in March 2006 by Interior Secretary Gale Norton to advise the U.S. Department of the Interior on resource conservation issues of interest to the hunting community. Soon after, the SCC charter was expanded to include advising the U.S. Department of Agriculture. In November 2006, the SCC considered proposing to the Secretaries a North American Wildlife Policy Conference focused on the wildlife and hunting heritage "problem of our time"—preserving the tradition of North American wildlife conservation now in jeopardy because of inadequate funding and declining hunter participation.

The historical precedent for such a conference is clear. The conferences that produced the 1908 White House Proceedings of the Conservation Conference of Governors, the 1930 American Game Policy, and the 1973 North American Wildlife Policy all addressed the wildlife "problems of their times" and set the stage for modern professional wildlife conservation based on the North American Model of Wildlife Conservation.

The North American Model is unique to North America because it focuses on, among other things, public ownership of wildlife, democratic rule of law, and hunting opportunities for all. Over the past century it was supported by sound public policies and has proven its many benefits to society, with most game species currently at historic high numbers. Today, however, the North American Model faces many new challenges that unresolved will seriously hamper hunting and wildlife conservation now and in the future. Without sustained participation in hunting, funding and volunteer efforts for habitat conservation will continue to decline.

The idea for the 2008 North American Wildlife Policy Conference was presented to President George W. Bush by the Boone and Crockett Club during an April 2007 meeting and in a May 11, 2007, follow-up letter. The SCC endorsed the letter on May 24, 2007. On August 16, 2007, President Bush signed Executive Order 13443, "Facilitation of Hunting Heritage and Wildlife Conservation," which, among other things, called for a North American Wildlife Policy Conference within one year to advance wildlife conservation and hunting heritage. The Conference was to be planned and carried out in consultation with the SCC. In a December 4, 2007, letter to the Chairman, Council on Environmental Quality, and the Secretaries of Agriculture and the Interior, the SCC proposed a concept for the Conference, which included five focus topics. The concept as well as the topics were:

- The North American Model for Wildlife Conservation
- State/Federal/Tribal Wildlife Management
- Habitat Conservation and Management
- Funding for Wildlife Conservation
- Perpetuating Hunter Traditions

These topics were accepted February 19, 2008, by the Chairman and the Secretaries.

The following "white papers," whose principal authors were SCC members, elaborate the focus topics and provide information and documentation that is central to the Conference. Each title follows a "problem definition/problem resolution" format, with special emphasis on challenges, opportunities, and supporting documentation.

The North American Model of Wildlife Conservation: Enduring Achievement and Legacy

While unrestrained commercial slaughter was the juggernaut that endangered North America's wildlife, regulated hunting became the founding influence and remains the foundation of the world's longest-standing movement for wildlife protection, use, and enhancement. This social and political movement eventually coalesced into a systematic arrangement of conventions, policies, and laws that we recognize today as the North American Model of Wildlife Conservation. Since its emergence, the North American Model has been remarkably successful not only in restoring and safeguarding wildlife populations, but also in developing the highly complex infrastructure that is essential for wildlife conservation and sustainable use.

Key Opportunities:

- Create and distribute information to wide target audiences on the effectiveness of the North American Model in restoring and maintaining wildlife.
- Develop programs to protect the exclusive authority of states, through state wildlife agencies, to conserve and manage public wildlife.
- Develop programs to guide laws and regulations that ensure that public wildlife remains the jurisdiction of states.
- Implement processes for hunter/conservationists to reach consensus on examples of "privatization" that can dilute the public trust status of public wildlife and develop mitigations.

Federal, State, and Tribal Coordination

Federal, state, and tribal wildlife managers—who must contend with human population growth, development, climate change, and other stressors—believe that the wildlife resources of this continent can only be sustained with more effective collaboration. Although some collaboration occurs, federal, state, and tribal land management plans and actions should be developed in concert because of the proximity of these lands to one another and because actions taken on one governmental entity's land may have an impact on wildlife and habitat occurring on another entity's land in the same range and/or habitat type.

Key Opportunities:

- Incorporate principles of the North American Model into public land management, planning, and decision-making.
- Establish a formal, routine coordination and communication framework for federal/state/tribal wildlife management.
- Set common wildlife population objectives for public land managers.

Wildlife Habitat Conservation

The ability of federal and state fish and wildlife agencies to maintain wildlife habitats and populations at levels consistent with public expectations and to conserve imperiled species on both public and private lands is eroding. Legal challenges to federal actions in areas dominated by public land hamper active habitat management, and private landowners require expanded incentives for undertaking habitat-friendly actions. Widespread habitat changes are occurring as federal forest and rangeland health declines, often adversely affecting wildlife populations.

Key Opportunities:

- Use state fish and wildlife agency population goals in federal land management planning processes and decisions.
- Develop new initiatives to reduce fuel loads on federal lands and promote biofuel production in order to actively manage our nation's forest lands.
- Develop systematic approaches to stop expansion of invasive species in habitat.
- Convene a panel to assess the compatibility of federal environmental laws and regulations, identify conflicting directions, and develop resolution measures.
- Incorporate comparative ecological risk assessments into federal land management decisions, particularly those related to Endangered Species Act Section 7 consultations.
- Review existing habitat evaluation and population modeling processes in light of changing landscape conditions to verify or enhance their usefulness in game population management. (See Appendix 7 for a specific example of how nutritional science could be used to benchmark big game population status and guide federal habitat assessments and plans.)

Coordinating Oil and Gas Development and Wildlife Conservation

Energy development is a major wildlife concern in significant parts of several western states (especially Wyoming, Colorado, New Mexico, Utah, Montana, and North Dakota), which contain the largest onshore natural gas reserves in the nation and some of the best wildlife and hunting habitats in the West. Given the magnitude of present and anticipated energy development in the West, it is doubtful that wildlife species and associated habitat values can be maintained without increased interagency collaboration and without reducing on-site habitat impacts and developing landscape-scale efforts to enhance habitats off site.

Key Opportunities:

- Establish and adhere to state fish and wildlife agency wildlife population and habitat goals during the planning, leasing, and permitting processes.
- Complete landscape ecosystems assessments prior to leasing activity.
- Reemphasize discretionary authority to defer leases in order to achieve wildlife populations and habitat goals.
- Implement wildlife corridors recommended by the Western Governors' Association.

Climate Change and Wildlife

The nation's Climate Change Science Program (CCSP) provides valuable information on projected effects of climate change on coarse-scale wildlife habitats, but it does not examine the effects of climate change on specific game species, populations, and habitats. Changes in priorities of the CCSP are needed to enable federal, state, and tribal natural resource and wildlife managers to have the tools to respond effectively to climate change.

Key Opportunities:

- Expand CCSP to include game species' populations and habitat.
- Provide shared resources and data to state and tribal wildlife managers for action.
- Develop adaptation strategies for "at risk" game species.

Funding the North American Model of Wildlife Conservation in the United States

For most of the last century, hunting, fishing, and boating license fees and equipment excise taxes have provided the majority of funding for conservation of our nation's fish and wildlife resources. New stressors (e.g., energy demands, climate change, and changing demographics) may lead to more needs than available funding can cover. Furthermore, the state/federal/sportsman/industry partnership that has driven the Wildlife and Sportfish Restoration Programs for over half a century needs attention and is showing signs that it may not meet future fish and wildlife conservation needs.

Key Opportunities:

- Expand state license dollars by increasing the federal reimbursement rate from 75% to 90% (for the Wildlife and Sportfish Restoration Programs) and tax revenue sources that enhance wildlife and habitat management.
- Dedicate new federal funds to state fish and wildlife agencies commensurate with their broader duties, which include management of species at risk and federal trust species (e.g., pending climate change legislation).
- Provide additional tax incentives and financial incentives to private landowners for voluntary programs to enhance wildlife habitat and hunter access.

Preserving the Tradition of Hunting: Education, Recruitment, and Retention

Participation in hunting has been declining in the United States for more than two decades (by 10.3% in 1980–1991, and by 4.4% in 1990–2005). This is part of a larger trend away from nature-based recreation of almost all types and a nationally recognized growing disconnect between children and nature.

Key Opportunities:

- Provide stable funding for grassroots conservation education and hunting recruitment programs that meet best practices.

- Develop new hiring and training practices for federal land management agencies that ensure personnel understand and value the importance of hunters and anglers to wildlife management.
- Increase structured hunting, shooting, and conservation education programs on federal lands.

Perpetuating Hunter Traditions: Access to Public and Private Lands

Hunting and recreational shooting with firearms and archery equipment are important elements of America's outdoor heritage and are uniquely dependent on public access to federal, state, and private lands. Constraints on access have been identified as one of the leading impediments to sustaining and growing participation in these activities.

Key Opportunities:

- Create a Hunting and Shooting Sports Foundation similar to the Recreational Boating and Fishing Foundation.
- Create a one-stop Web site with hunting access details for federal lands.
- Expand and develop partnerships with the U.S. Department of the Interior, the U.S. Department of Agriculture, and the U.S. Department of Defense to determine what lands could be accessed by hunters and recreational shooters.

The North American Model of Wildlife Conservation: Enduring Achievement and Legacy

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Introduction

European discoverers of the New World set few limits on their use and taking of wildlife. As a result, by the end of the 19th century, many wildlife species, especially in the United States, were in serious decline. This unregulated exploitation eventually gave way to widespread public outrage and ultimately set up a conservation reaction in the late 1800s—a movement to conserve and manage wildlife through regulated hunting. The well-publicized slaughter of the American bison helped to instill a notional view that there were limits to America's wildlife and other resources. This circumstance, perhaps more than any other, helped to launch a collective sense of citizen stewardship and responsibility for wildlife and their habitat.

Initially slow to take root, this wildlife conservation movement was led in both the United States and Canada by hunters who were committed to the sustainable use of wildlife for personal rather than market purposes, democratic access to nature, and a standard of fair chase hunting. In hindsight, these concepts can be viewed as the first North American conservation ethic.

While unrestrained killing of wildlife for market purposes was the main force that endangered North America's wildlife, regulated hunting became the founding influence and remains the backbone of the world's longest standing movement for wildlife protection, use, and enhancement. This social and political movement eventually coalesced into a systematic arrangement of conventions, policies, laws, and institutions that we recognize today as the North American Model of Wildlife Conservation.

Wildlife abundance in America today is often taken for granted. Citizens of the United States and Canada have come to expect wildlife diversity as part of their cultural heritage, yet remain largely uninformed of the heroic efforts that led to our priceless access to the wild. Nor do they understand the complex infrastructure that ensures the continued presence of wildlife in our lives. Consequently, an impression has taken hold that wildlife exists free of human influence and that only in the absence of human contact can wildlife thrive. For many, wildlife, it seems, exists by accident! The reality, however, is that the wildlife we enjoy today exists because of human endeavor.

Much is threatened by this general lack of understanding, including wildlife diversity and abundance as well as our cherished tradition of open access to it. In an increasingly populous world

and an ever expanding demand for energy and other resources, we now face enormous challenges in conservation. We cannot hope to succeed in our efforts to safeguard wildlife if we do not understand the policies, laws, and principles that collectively contribute to its continued existence.

Problem Summary

The North American Model of Wildlife Conservation consists of seven key principles:

1. The Public Trust Doctrine
2. Democratic Rule of Law
3. Opportunity for All
4. Commercial Use
5. Legitimate Use
6. Science and Wildlife Policy
7. International Wildlife Migratory Resources

Hunting has been critical to the success of the North American Model. Hunters have been the main proponents of wildlife* as a public trust, and they have, by and large, paid the bills for wildlife conservation through purchases of licenses and hunting equipment. Societal, economic, and political changes have occurred that may present serious challenges to the North American Model:

- Very little information has been provided to the public about the Model and its contribution to North American wildlife conservation. Without that information, public acceptance and support of the North American Model cannot be expected, further jeopardizing wildlife conservation and our hunting heritage.
- Wildlife-related ballot measures based not on science but on emotion and that exclude traditional uses of wildlife undercut the Public Trust Doctrine.
- Illegal commerce in dead animal parts damages proven conservation principles.
- Maintaining public acceptance of regulated hunting as a legitimate use of wildlife is a continuing challenge as society becomes more detached from the outdoors and outdoor activities.
- Investment in and integration of both ecological and social science in wildlife agency decision making is a continuing and increasing challenge.
- Managing and conserving migratory species is increasingly complex in the presence of globalization, climate change, and changing economic alliances.
- Actual and projected declines in hunter participation for social, demographic, and lifestyle reasons indicate that America's hunting heritage may be at risk, and along with it the successful practice of American wildlife management.

*In this paper, the term "wildlife" refers to public wildlife, including all game animals except those typically defined in state and provincial statutes as livestock, domestic, game farm animals, or other privately owned animals. See, for example, provincial and state statutes in Saskatchewan, Alberta, Manitoba, Idaho, Montana, and North Dakota (Meschishnick, Reiger, & Behiel, 2003). In addition, migratory birds are covered by specific treaties and laws in the United States, Canada, and Mexico and are managed under the federal governments in cooperation with state and other local governments.

- State management of wildlife appears at risk as the historic hunter-supported financial base declines.

In recent years, state agencies have taken on a greater role in conserving all wildlife species (in keeping with the North American Model). Because most states provide little or no general fund support for wildlife, there is a growing need for increased state government financial support for these programs. The continued effectiveness of state management of all wildlife becomes a serious question.

The Model has been extremely successful and effective in North America. However, today it faces increasingly complex challenges, and there has been no organized effort to assess and summarize these challenges and attempt to resolve them. The consequences of inaction could include serious weakening or even collapse of the Model, with a resulting decline in the quality of North American wildlife populations, habitat, and hunting that we have enjoyed since the mid-20th century.

Seven Core Principles of the North American Model

The North American Model's two basic tenets—that harvest of wildlife is reserved for the noncommercial use of individual hunters and is to be managed in such a way that wildlife populations will be sustained at optimal levels forever—are elaborated by seven principles first articulated in the mid to late 1800s. Refined and modified over time, these principles of the Model may best be remembered as the Seven Pillars for Wildlife Conservation:

1. **The Public Trust Doctrine.** An 1842 U.S. Supreme Court opinion, in Martin v. Waddell, established the legal precedent that it was the government's responsibility to hold wild nature in trust for all citizens. The next three pillars reflect this fundamental doctrine.

2. **Democratic Rule of Law.** Wildlife is allocated for use by citizens through laws. This protects against the rise of elites who would appropriate wildlife to themselves (as occurred in Europe). All citizens can participate, if necessary through the courts, in developing systems of wildlife conservation and use.

3. **Opportunity for All.** In Canada and the United States, every man and woman has a fair and equitable opportunity under the law to participate in hunting and fishing. No one group, hunters or nonhunters, can legally exclude others from access to game within the limitations of private property rights.

4. **Commercial Use.** Hunters and anglers led the effort to eliminate markets and commercial traffic in dead animal parts, which was a huge business in the latter half of the 1800s and the early 1900s. The market killing of birds and animals decimated many species and brought some to near extinction or extinction.

5. **Legitimate Use.** Although laws could govern access to wildlife and ensure that all citizens had a say in its protection, there had to be guidelines as to appropriate use. This is defined as killing for food and fur, self-defense, and property protection, categories that are broadly interpreted.

6. **Science and Wildlife Policy.** Interest in science and natural history was deeply ingrained in North American society, a fact reflected in the emphasis placed on recording wildlife habits and diversity by almost every major expedition charged with mapping the continent, along with the enormous popularity of amateur natural history collections. Hunters and anglers are, by habit and inclination, naturalists. Science is identified as a crucial requirement of

wildlife management. For this Aldo Leopold, in his 1930 American Game Policy, credited Theodore Roosevelt, explicitly stating that science should be the underpinning of wildlife policies.

7. **International Wildlife Migratory Resources.** The boundaries of states and nations are of little relevance to migratory wildlife and fish, and policies and laws for wildlife conservation have to address this reality. The Migratory Bird Treaty Act of 1918 is an excellent example of successful international cooperation.

Goals, Challenges, Consequences of Inaction, and Opportunities for Each of the Core Principles

The Public Trust Doctrine: State and Provincial Governments Hold Wildlife in Trust for the Public

Problem Summary

The keystone of the North American Model is that wildlife is managed as a public trust resource. The public is generally unaware of the historical foundations and ongoing relevance of the Public Trust Doctrine. Furthermore, the legal framework that supports the Doctrine is insufficient with respect to wildlife uses and the habitats on which they depend. As a consequence, many of the challenges to wildlife and its management, and special interest advocacy against consumptive use of wildlife, are difficult to effectively address.

Goals

The Public Must Understand and Value the Doctrine. The public needs to understand that wildlife, regardless of location, is a public asset, with the government acting as trustee. The people must hold the government as trustee accountable for that trust.

Strengthen the Legal Foundations. Constitutions, laws, and administrative rules that govern the use of fish and wildlife should be explicit in defining these resources as property of the states and provinces to be held in public trust and conserved, managed, and utilized for the benefit of present and future generations.

Challenges

Decreasing Participation in Hunting and Other Outdoor Activities. Hunting participation in the United States has declined in recent years in absolute numbers of hunters and in licenses sold. Hunters as a percentage of the U.S. population have also declined (Responsive Management/ National Shooting Sports Foundation, 2008). In addition, the number of participants in other outdoor activities (visits to national parks, state parks, and national forests, as well as fishing and camping) has declined. These trends in hunting participation reflect an overall trend in declining participation in outdoor activities. All of this suggests a growing public "detachment" from the natural world and related functions, including state/provincial wildlife management. It also strongly suggests an increasing lack of public knowledge about the role of wildlife conservation, including the Public Trust Doctrine and the resurgence of North American wildlife. This all conspires to increase the vulnerability of the North American Model.

Identification and Mitigation of Conditions that "Privatize" Wildlife. Protecting public wildlife from "privatization" or conditions that can dilute the public trust status of public wildlife is a key priority in sustaining and protecting the North American Model. Even though many wildlife professionals have concerns about the impact of game farming/ranching on the integrity of the Model, the fact remains that these facilities exist in some jurisdictions of North America, and there is no clear consensus on how to manage or deal with them, including fair chase, disease transmission, and other social or biological considerations. The absence of a clear consensus is understandable due to the American system of government, in which there is embedded a body of rights that citizens hold with respect to their property. While a core principle of the Model is that wildlife is held in trust for the public good and cannot be privately owned, public wildlife resides on private land as well as federal and state lands. Balancing the body of law that maintains the rights of property owners with the successful and enduring legacy of the Public Trust Doctrine is a continuing challenge. The best outcomes will be enduring bonds between wildlife managers and private property owners that sustain the Model, and effective and timely processes for the hunting/conservation community to develop consensus on appropriate responses to examples or conditions of "privatization" and potential mitigation measures.

Unsustainable Land Use Practices. The U.S. population is projected to increase to nearly 400 million by the year 2050, from the 2000 census count of about 281 million. Current trends in human impacts on the land, including habitat loss and fragmentation, pose the greatest long-term threat to wildlife. Unless major changes in social values and corresponding political ideology occur, past and present wildlife conservation successes will be at significant risk.

Animal Rights. North American wildlife conservation programs have largely adhered to three fundamental principles regarding use of wildlife: (1) the use must not threaten or endanger the species, (2) the techniques used to kill animals must be fair and acceptable to society, and (3) the use must serve a legitimate purpose. These principles are grounded in the concept of wildlife as a public trust resource that must be perpetuated for the benefit of present and future generations. However, this runs counter to the animal rights doctrine that forbids the use of sentient beings for any purpose. Policies that would eliminate traditional human uses (hunting) of wildlife would denigrate wildlife's value as a public trust resource.

Consequences of Inaction

Government trusteeship of wildlife as a public resource arose in North America during a time when the stakeholder base was narrower than it is today. Primary stakeholders in that time were consumptive users and those with agricultural interests. Contemporary society has a base of stakeholders with more diverse interests, ranging from people whose interests are tangential and appreciative of the existence of wildlife to those who want to avoid interactions with wildlife altogether. Moreover, the "digitization" of American culture and society and the concomitant loss of outdoor experiences and values will likely mean that future generations will value wildlife and natural resources even less so than today. To ensure that future wildlife conservation policy makers have the tools they need to conserve wildlife, the Public Trust Doctrine must be strengthened. Absent this, the North American Model will not be sustainable and will fail future generations.

Opportunities

1. Develop ways and means to effectively create and distribute appropriate information on the North American Model/Public Trust Doctrine for dissemination to a wide target audience,

including the general public; academic programs; and state, provincial, and federal programs.

2. Develop and implement processes for members of the hunting/conservation community to reach consensus on specific prioritized examples or conditions of "privatization" that can dilute the public trust status of public wildlife, and develop associated mitigation measures.
3. Develop specific programs to protect the exclusive authority of states and provinces, through state and provincial wildlife agencies, to conserve, regulate, and manage public wildlife.
4. Implement a review of impediments to hunt internationally, such as prohibitive firearm or importation laws that would undermine incentives for cooperating countries to contribute to shared wildlife management programs, and recommend solutions to minimize or eliminate impediments.

Democratic Rule of Law: Access to and Use of Wildlife Is Best Managed Through Laws and Regulations That Reflect Inclusive Citizen Engagement as Implied by the Public Trust

Problem Summary

The imposition of values that exclude traditional uses of wildlife resources through access to the courts and ballot measures not only excludes a specific use, but undercuts the principles and discharge of the Public Trust Doctrine and therefore puts at risk the public's trust in government stewardship of wildlife resources.

Goal

Develop Better Decision-Making Processes. Improve wildlife decision-making processes to make them more cooperative, open, and constructive and to maintain the principles and enhance the discharge of the public trust. Such processes will lead to decisions that are sustainable and uphold traditional wildlife uses enshrined through the Public Trust Doctrine.

Challenges

Public Perceptions About the Mindset of Government Wildlife Managers. Public perceptions about the mindset of government wildlife managers sometimes contribute to irreconcilable differences, often leading to judicial intervention. There are groups and segments of society that do not trust government agencies to make decisions. Sometimes this distrust is based on perceptions that all government wildlife managers cater only to hunters. Others believe that government wildlife managers are losing (or have lost) their connection to hunters and that regulations are created simply to make it more difficult, if not impossible, to hunt.

Consequences of Inaction

Decisions based on sound science should promote maintenance of healthy wildlife populations and habitats. Conversely, decisions based on politics, emotion, and special interests may not serve wildlife and often result in loss of recreational opportunity. One example is the consequences of not hunting whitetail deer where overpopulation causes starvation, stress to the animals, and damage to personal and public property. A more complex example is dove hunting, where science

may support recreational hunting, and social or emotional forces are opposed, and hunting is not needed to maintain sustainable populations. Failure to improve wildlife decision-making processes will gradually weaken professional wildlife management and our hunting heritage and will further jeopardize the North American Model.

Opportunities

1. Develop decision-making mechanisms that have two simultaneous objectives:
   a. more effectively communicate the rationale, results, and recommendations of science to the general public; and
   b. ensure that stakeholder perspectives are used in conjunction with science.
2. Improve communication to and participation by the public in decision-making processes that impact wildlife management.

Opportunity for All: The Democracy of Hunting

Problem Summary

Because hunting in North America has not been reserved or perceived as a privilege of the wealthy or well-connected, it has enjoyed widespread popular support. Increased efforts by wildlife managers and the hunting/conservation community are needed to ensure that hunting retains public support and that public hunting opportunity is fair and equitable within the limitation of laws and regulations.

Goals

Ensure Fair and Equitable Opportunity for Becoming a Hunter. Making sure that all citizens have the opportunity to become hunters, and retaining and enhancing the popular support of hunting among the nonhunting public, are fundamental to North American wildlife conservation.

Ensure Fair and Equitable Access to Hunting Opportunity. Ensure that all hunters have fair and equitable lawful opportunity to participate in hunting and promote hunter access to wildlife resources on public and private lands, without respect to income or group affiliation.

Recognize the Societal Value of Fair-Chase Hunting. While the conservation impact of fair-chase hunting extends benefits to all members of society, it is also true that for hunting participants the experience leads to a strong commitment to sustainable wildlife use and wildlife conservation. This commitment to wildlife conservation arises from the unique spiritual connection to the land and the rhythms of nature that many hunters experience while hunting.

Challenges

Access to Wildlife. As stated in the goals above, we must "ensure that all hunters have fair and equitable lawful opportunity to participate in hunting and promote hunter access to wildlife resources on public and private lands . . . ." Accordingly, the long-term integrity of hunting programs requires that all hunters have access to high-quality habitats that provide a rewarding hunting experience. For many Americans, access to public hunting areas is a critical component of hunting opportunity. Access to private hunting areas remains vitally important to many American hunters as well. Enhancing the public's ability to access property for hunting free-ranging wildlife

remains a key priority for sustaining and protecting the Model. Federal and state agencies, along with owners of private lands, should be strongly encouraged to adopt policies and practices that support an enduring system of land management that assures access by hunters in perpetuity. In addition, a compelling challenge is to develop consensus-based lists of prioritized examples or conditions that limit hunting opportunity and to develop associated response options.

Consequences of Inaction

Actions that create an inequitable, tiered, or class-conscious structure to hunting opportunity will undermine the stability of the North American Model, which is based in part on fair and equitable access. Real or perceived inequities in opportunities to access game populations lead to resentment among those hunters who feel excluded and skew the historic alignment of interests among hunters. Such inequities can also reduce the acceptance that nonhunters have of hunting.

Opportunities

1. Develop ways and means to effectively create and distribute appropriate information on the North American Model/Public Trust Doctrine for dissemination to a wide target audience, including the general public; academic programs; and state, provincial, and federal agencies.
2. Encourage the creation of incentive-based landowner programs to maintain and increase habitat and to encourage public access for hunting opportunity.
3. Communicate the practical applications of hunting as management tools and develop ways and means to effectively create and implement outreach efforts that convey to the public the deeper philosophical, emotional, and spiritual aspects of hunting and the influence these forces have on developing a conservation ethic and commitment.
4. Develop and implement processes that assist members of the hunting/conservation community to reach consensus on specific prioritized examples or conditions that may limit public hunting opportunity, and develop appropriate response options.
5. Encourage federal and state agencies, along with private landowners, to support management plans that assure hunter access in perpetuity.

Commercial Use: Prohibitions on Illegal Commercial Uses Deleterious to Wildlife Conservation

Problem Summary

Historically, wide-scale legal and illegal commercial slaughter and marketing of wildlife led to severe depletions, and in some cases extinction, of a range of wildlife species. Today, illegal commerce in dead wildlife destroys proven conservation principles, increases policing costs to the public, fosters genetic pollution and the spread of diseases to wildlife populations and livestock, and threatens public health. It also leads to loss of wildlife habitats and public lands, as well as loss of public trust rights and freedoms.

Goals

Ensure That Wildlife Remains Wild. Public wildlife must remain a resource managed by state wildlife agencies, and federal agencies where appropriate, in congruence with the Public Trust Doctrine.

Ensure That Private Wildlife in Captivity Is Not Mixed With Domestic Livestock. The emergence of legal game farming, which is the application of accepted livestock management practices to species that are considered "domestic wildlife," has led to a confusion of laws regarding regulatory oversight, acceptable management practices and precautions, and even our notion of "wildness." Currently, regulatory oversight has been mixed in state governance between agricultural and natural resource agencies, while federal authorities have struggled with the interstate movement of animals raised under game farm conditions. Because private game farm animals have been subjected to different environmental conditions, breeding programs, and health management than have free- ranging public wildlife, it is imperative that private game farm and public free-ranging wildlife be separated at all times. This is not only to ensure the health of wildlife populations but also to safeguard public health.

Ensure That Management Agencies and the Public Understand the Dangers That Illegal Commercial Use of Dead Wildlife Presents to Conservation Efforts. It is imperative that agencies charged with the responsibility of managing wildlife understand and communicate the historical arguments for and continued relevance of the principles against illegal wildlife commercialization enshrined in the North American Model.

Challenges

Mixed Governmental Agency Jurisdiction Oversight of Private Captive Wildlife. Policies by state and provincial agricultural agencies that support the domestication of private wildlife can weaken the North American Model. State and provincial wildlife management agencies should have the oversight responsibility of the "taking for sport" of private captive wildlife.

A Market in Game Farms Enables the Possible Spread of Disease. There is currently a market in breeding and exporting private trophy game species animals to private "game farms." This could have serious consequences for wildlife in view of an inadequate body of science pertaining to wildlife disease and parasites.

Other Threats to Wildlife Conservation. Large markets in exotic wildlife (e.g., reptiles and amphibians, both for food and pets) and deeply held ethnic beliefs in the healing properties of dead wildlife stimulate illegal wildlife markets. We need to ensure that all harvests are conducted by legal, enforceable allocations to individuals so as to counter markets in dead wildlife.

Consequences of Inaction

Failure to maintain vigilance on illegal commerce in dead wildlife can lead to a rapid depletion of wildlife via illegal markets. Trying to police markets in dead wildlife is not only very costly but leads to calls for severe policing practices, the abolition or severe control of firearms, and restrictions on civil liberties. Failure to deal with illegal markets in wildlife can lead to the spread of diseases to livestock and humans and back again into unaffected wildlife populations.

Opportunities

1. Develop ways and means to effectively create and distribute appropriate information on the dangers inherent in illegal markets for wildlife products for dissemination to a wide target audience, including the general public; academic programs; and state, provincial, and federal agencies.

2. Develop specific programs to protect the exclusive authority of states and provinces, through state and provincial wildlife agencies, to conserve, regulate, and manage public wildlife.

3. Develop specific programs to guide implementation of laws and regulations that ensure that public wildlife remains the jurisdiction and responsibility of states/provinces, and, where appropriate, federal fish and wildlife management agencies.

Legitimate Use: Ensure That Wildlife Is Used for Legitimate Purposes: Food, Fur, Self-Defense, and Protection of Property

Problem Summary

While the traditional understanding of legitimate wildlife use has included fur, food, self-defense, and the protection of property, there are contemporary perspectives that would imply otherwise. While historically, frivolous killing of wildlife threatened the sustainability of many species, regulated hunting and trapping today pose no threat to species sustainability and are legitimate uses of wildlife. How to maintain public acceptance of regulated hunting as a legitimate use of wildlife is a crucial question. This not only relates to the future of hunting, but also to the continued participation of hunters in the conservation of wildlife.

Goals

Rearticulate What Constitutes Legitimate Use of Wildlife. The broad understanding of the legitimate uses of wildlife should be reinforced through broad public dialogue led by the hunting and trapping community.

Promote the Conservation Value of All Wildlife. In addition to developing clear definitions of legitimate use, this dialogue must recognize the conservation value of all wildlife species and also recognize that nonconsumptive uses of wildlife are also legitimate.

Challenges

Hunters and Nonhunters Need to See Themselves and Each Other as Stewards of Wildlife. Public support for hunting is most likely to prevail when the public sees the hunter in the best possible light—as a wildlife steward and conservationist in the fullest sense of the terms. To the extent that hunters deviate from that heritage, one could expect the concomitant appreciation of hunting by the general public to diminish.

Consequences of Inaction

Hunters may be branded as not caring about the natural world and about all wildlife, especially before a nonhunting public.

Opportunities

1. Develop ways and means to effectively create and distribute appropriate information on the North American Model/Public Trust Doctrine for dissemination to a wide target audience, including the general public; academic programs; and state, provincial, and federal agencies.
2. Improve communication to and participation by the public in decision-making processes that impact wildlife management.
3. Communicate the practical applications of hunting as management tools and develop ways and means to effectively create and implement outreach efforts that convey to the public the

deeper philosophical, emotional, and spiritual aspects of hunting and the influence these forces have on developing conservation ethics and commitment.

Science and Wildlife Policy: Science Is the Primary Basis for Wildlife Policy

Problem Summary

Investment in and integration of both ecological and social science by management agencies is inadequate for making many wildlife policy decisions at the landscape level. In addition, the politicization of wildlife management decisions can result in policies that alienate hunters and other stakeholders and cause nonhunters to question the claim of "science-informed management." Also, ballot measures have resulted in mandates that, in many cases, are contrary to the prevailing science.

Goals

Strengthen Science-Based Decision Making. Wildlife policy development should be informed by appropriate science. To be effective, relevant science must be utilized and integrated into decision making. Furthermore, science must be represented accurately and not modified to suit preconceived positions.

Maintain Adequately Funded Wildlife Science Programs. Effective science is a continuous process, the need for which is not necessarily determined by the abundance of a species. Long-term commitments to science are essential for adaptive management. They require stable, enduring funding commitments.

Ensure Stakeholder Involvement in the Decision-Making Process. Broader societal input must be incorporated into the science base of the decision-making process. This should be approached with no fewer rigors than the ecological aspects. Public input and participation should be structured and strategic to best inform policy development.

Ensure That Human Dimensions Studies Are Available and Integrated Into the Science Base. Scientific understanding of the social context should be considered important to effective decision making, just like empirical ecological research. Furthermore, social concerns should help to inform and establish science priorities.

Challenges

The following are challenges specific to governmental agencies that manage wildlife populations:

- There is inadequate funding and prioritization of science, a lack of social science expertise, and inadequate integration of biological and social science.
- Public mistrust and lack of understanding of science hinders its use in policy development.
- Politicization of boards, commissions, and superagency leadership (e.g., a wildlife management agency subsumed within a larger resource management agency with a political appointee as head), resulting in policies that do not reflect the greater good or public trust mandates.
- There is lack of rigor and discipline in the process of policy/management decision making, which leads to oversimplification of decision frames, a neglect of available science,

overlooking needs for critical information, and inadequate anticipation of collateral and subsequent effects of policy decisions and management actions.

Consequences of Inaction

Wildlife management programs and directives are not sustainable. Public support for wildlife conservation and management is lost. Overall biodiversity, including game species, declines. Wildlife management policy is increasingly dictated through direct democracy (i.e., ballot initiatives), without adequate dialogue and investigation, resulting in oversimplification and polarization of issues and ultimately an overall devaluing of wildlife and conversion to a pest management model. Traditional management approaches and traditional uses of wildlife, while biologically sound and socially acceptable, may decline through lack of political support.

Excessive use of resources by agencies mitigating unanticipated consequences of decisions and actions that were not thoroughly analyzed likely undermines agency credibility in future actions. The leadership role of fish and wildlife agencies in conservation is diminished.

Opportunities

1. Develop decision-making mechanisms that have two simultaneous objectives:
    a. more effectively communicate the rationale, results, and recommendations of science to the general public; and
    b. ensure that stakeholder perspectives are used in conjunction with science.
2. Improve communication with and participation by the public in decision-making processes that impact wildlife management.

International Migratory Wildlife Resources: Recognize and Manage International Migratory Wildlife as a Shared Resource

Problem Summary

Migratory species require coordinated management by different political jurisdictions. Globalization, changing politics, economic forces, cultural change from immigration, landscape modification, and climate change all make the normally complex issue of managing and conserving migratory species even more challenging. The robust and highly effective approaches to migratory species management enshrined early in the North American Model must be assiduously attended to in this changing context, but also utilized as effective models for application to other wildlife conservation challenges.

Goals

Ensure Continuing Support for Coordinated International Management Approaches. Migratory species management is currently served by a highly complex array of policies, programs, specialist working groups, and funding mechanisms, all of which are deployed to ensure conservation and sustainable use of these species. Ensuring that these coordinated efforts remain in place and are appropriately supported by the relevant political jurisdictions will require constant effort and attention.

Work to Remove Impediments to the Continuing Efforts to Conserve, Manage, and Hunt Migratory Species in North America. Even where species are migratory or transboundary in

distribution, hunting has been the basis of conservation and management programs, a number of which have international treaty designations.

Apply Lessons From International Collaboration to Safeguard Wildlife Conservation in North America. While migratory species were effectively addressed in the early years of the North American Model's formulation, a diverse group of other species has ranges that encompass habitats in more than one country. For such transboundary species, and for other special wildlife conservation challenges, the lessons learned in the cooperative arrangements deployed for migratory species should prove highly relevant and worthy of extension.

Challenges

Differences in People and Cultures Create Diverse Opinions on How to Manage Wildlife. Different cultural values and more diverse publics do not agree on goals for managing many species of wildlife. The proliferation of interest group priorities, from animal rights to energy development, can include those that do not share the main principles of the North American Model or support science-driven management through professionally staffed agencies.

The Model Has Not Been Fully Utilized. The North American Model of user-supported wildlife conservation is not the basis for all conservation needed in North America. Most importantly, the solid funding mechanism of the Model has not been expanded to address all wildlife issues or include financial contributions by all citizens. Furthermore, wildlife ecology issues and their potential solutions, including maintaining habitats, servicing diverse publics, and maintaining a balance between protection and human use of wildlife are not as regularly engaged by North American countries working cooperatively as in the past.

Consequences of Inaction

Separate goals for shared resources combined with cultural change and values that do not support responsible human uses of wildlife can only lead to conflict. Loss of habitat to unfettered economic development will erode the wildlife restoration achievements of the past century. Failure to address issues of the globalization of human activities will leave North American wildlife vulnerable to exotic disease and invasive plants. Continued lack of regular engagement between countries on shared wildlife issues, ranging from protection to managed use, will foster distance rather than collaborative effort. Failure to embrace conservation of all wildlife as a mutual goal and to find ways for all citizens to contribute to conservation will leave countries, hunters, and anglers fragmented as society evolves in complex ways.

Failing to learn from the successes of close cooperation under the North American Waterfowl Management Plan will continue insular efforts to solve wildlife problems rather than working through collaborative strength and partnerships. Dwelling on past achievements without adaptive methods and approaches to a changing North American climate and landscape will not sustain desired traditional activities like hunting.

Opportunities

1. Develop initiatives for the management of transboundary or other wildlife populations of special concern that reflect the effective characteristics of existing programs for the conservation of migratory species.

2. Implement a review of impediments to hunt internationally, such as prohibitive firearm or importation laws that would undermine the incentive for cooperating countries to contribute

to shared wildlife management programs, and recommend solutions to minimize or eliminate impediments.

Priority Opportunities

1. Develop ways and means to effectively create and distribute appropriate information on the North American Model/Public Trust Doctrine for dissemination to a wide target audience, including the general public; academic programs; and state, provincial, and federal agencies.
2. Develop specific programs to protect the exclusive authority of states and provinces, through state and provincial wildlife agencies, to conserve, regulate, and manage public wildlife.
3. Develop specific programs to guide implementation of laws and regulations that ensure that public wildlife remains the jurisdiction and responsibility of states and provinces and, where appropriate, federal fish and wildlife management agencies.
4. Develop and implement processes for members of the hunting/conservation community to reach consensus on specific prioritized examples or conditions of "privatization" that can dilute the public trust status of public wildlife and to construct associated mitigation measures.
5. Develop and implement processes for members of the hunting/conservation community to reach consensus on specific prioritized examples or conditions that may limit public hunting opportunity and to foster appropriate response options.
6. Encourage federal and state agencies, along with private landowners, to support management plans that assure hunter access in perpetuity.
7. Encourage the creation of landowner incentive-based programs to maintain and increase habitat and to encourage public access for hunting opportunity.
8. Develop decision-making mechanisms that have two simultaneous objectives:
    a. more effectively communicate the rationale, results, and recommendations of science to the general public; and
    b. ensure that stakeholder perspectives are used in conjunction with science.
9. Improve communication with and participation by the public in decision-making processes that impact wildlife management.
10. Communicate the practical applications of hunting as wildlife management tools and develop ways and means to effectively create and implement outreach efforts that convey to the public the deeper philosophical, emotional, and spiritual aspects of hunting and the influence these forces have on developing conservation ethics and commitment.
11. Implement a review of impediments to hunt internationally, such as prohibitive firearm or importation laws that would undermine the incentive for cooperating countries to contribute to shared wildlife management programs, and recommend solutions to minimize or eliminate the impediments.
12. Develop initiatives for the management of transboundary or other wildlife populations of special concern that reflect the effective characteristics of existing programs for the conservation of migratory species.

Conclusions

To the vast majority of the American public, the unique and improbable history of our conservation achievement remains unknown. Even most hunters remain ignorant of their own conservation legacy. Yet, for more than 100 years, a recognizable protocol has been guiding the stewardship and sustainable use of North America's wildlife and at the same time safeguarding democratic access and traditional activities that are cherished elements of our way of life. The North American Model of Wildlife Conservation has been responsible for a remarkable resurgence in wildlife as well as a staggering and diffuse economy that has enabled wildlife to "pay its way" across a vast and diverse continent.

Despite these achievements, all is not well. Social and economic forces of great magnitude are combining with the normal challenges inherent to conservation, resulting in an organic, evolving and highly complex political and social frontier that is severely testing the principles we once thought inviolable. Changing social realities not only relate to vastly increasing numbers of people, but also include extensive recalibration of ethnic and cultural proportions that bring new and differing attitudes toward wildlife and its use. Urbanization is a relentless force full of profound implications for what we once thought was the obvious relevance of wildlife in people's lives. Globalization is changing the very fabric of life in North America, and energy, security, and finance are riding hard toward an escalating and inevitable collision with some of our most cherished conservation positions and programs.

As the foregoing review of the North American Model's principles and challenges has indicated, we are at a juncture in our history where the future of wildlife and how we interact with it are highly uncertain. An enormous array of factors needs improved definition, and a host of policy and legal institutions requires intensive review and adjustment. To further complicate these realities, the financial foundations of wildlife conservation are themselves in decline while escalating landscape alterations and changing land ownership patterns are casting deep shadows over what we once thought of as ingenious and lasting solutions. The demands for improved science and better decision-making frameworks have emerged as increasingly complex and vibrant challenges.

In short, there has never been a more appropriate time for us to take stock, regroup, and recommit ourselves to wildlife and those founding traditions and values that rescued and restored it some four generations ago. This review of the North American Model of Wildlife Conservation is more than timely: it is critical to our future. Even great things, no matter how hard-won, can be easily lost. Neglect is the rust of progress. It is not surprising that educating the public about our conservation history has surfaced as one of the most critical requirements from this review. Without knowledge we cannot care, and without concern we will not act. The North American Model of Wildlife Conservation will not falter because of the problems it faces. As in the fading days of the bison, it will rise or fall with the tide of citizen commitment.

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Federal, State, and Tribal Coordination

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Problem Summary

In light of our current knowledge of ecosystem sustainability in the face of human population growth, development, climate change, and other stressors, federal, state, and tribal wildlife managers of North America believe wildlife resources of this continent can only be sustained with more effective collaboration. Wildlife conservation efforts aimed at managing populations, habitat, and people must be coordinated in order to achieve landscape-scale goals. Although it is most apparent in addressing migratory species, interstate fishery resources, and other federal trust species, the importance of coordination is also evident in the management of resident species and/or populations that cross state or state/tribal boundaries or reside on federal public land. Federal, state, and tribal land management plans and actions should be developed in concert because of the proximity of these lands to one another and because actions taken on one governmental entity's land may have an impact on wildlife and habitat occurring on the same range and/or habitat type. Although we recognize that some level of collaboration and coordination exists today and numerous federal laws authorize or require coordination (see Appendix 5), it is apparent that improvement is necessary to meet the fish and wildlife conservation challenges of tomorrow.

Goals

In general, federal and state wildlife agencies and tribal governments should coordinate and collaborate in planning, decision making, and implementation activities to achieve maximum wildlife conservation success for the nation. They should also

1. Ensure that federal agencies, state agencies, and tribal governments integrate the seven principles of the North American Model of Wildlife Conservation (Geist 2006) into resource management decision making;

2. Ensure that federal agencies, state agencies, and tribal governments regularly and routinely communicate and collaborate in resource management decision making, planning, and implementation in order to achieve seamless implementation and integration of wildlife objectives regardless of land status; and

3. Ensure that federal agencies, state agencies, and tribal governments collaborate in wildlife conservation efforts aimed at managing populations, habitat, and people to achieve

landscape-scale goals such as establishing wildlife population objectives; maintaining, enhancing, and reestablishing migratory corridors for wildlife; and enhancing human access for wildlife-related recreation.

Challenges

Although some collaboration currently exists, there are challenges that must be addressed to maximize collaboration and achieve the stated goals. Some federal and state agencies and tribal governments are unaware of existing opportunities to collaborate. Even though various cooperative agreements and memoranda of understanding exist, at the field level they often collect dust on bookshelves and in filing cabinets. Irregular and somewhat voluntary meetings occur among federal and state agencies and/or tribal governments regarding land management planning activities and wildlife population objectives. Often state agencies and tribal governments lack the capacity and knowledge of the process to fully engage in federal planning activities. Even though state agencies may become involved in federal agency planning processes in a "cooperating agency" status, not all elect this approach. Due to the sovereign status of tribes, tribal governments desire, and federal policy mandates, a "government-to-government" approach.

The challenges continue and occur at the federal, state, and tribal levels. No one form of government is fully at fault. Federal land management agencies may not incorporate state or tribal wildlife and habitat objectives into their land management plans. State agencies and tribal governments may not have well-documented population objectives for federal agencies to incorporate into their plans. Federal agencies often consider the comments of state wildlife agencies and tribal governments as just another public comment as opposed to professional judgment and recommendations from a cooperating/partnering agency with its own set of statutory authorities. States and tribes may lack the dedicated resources to contribute to the federal planning process. Even if they do become engaged, states may present conflicting input to the decision-making process due to conflicts within the state government itself. Wildlife resources agencies may provide different comments than their own governor's office, the state's department of agriculture, or other state agencies with resource management authority. Federal agencies are forced to try to reconcile these conflicting recommendations.

More specific challenges include the following:

1. Federal land management planning decisions continue to hamper the ability of states to effectively implement wildlife management projects and to promote the North American Model of Wildlife Conservation.
2. Irregular (and somewhat voluntary) meetings occur among federal, state, and tribal wildlife managers regarding land management planning activities and setting wildlife population objectives.
3. Some state agencies do not become involved in the federal planning process in a cooperating agency status.
4. Federal and state agencies and tribal governments may not have defined or reached an agreement on each other's expectations of involvement in a collaborative process.
5. Statewide wildlife management plans are not always incorporated into federal land management plans.
6. Federal land management activities that could contribute to state plans (State Wildlife, Action Plans, habitat plans, and wildlife plans) are not always identified or implemented.

7. In some cases, state agency and tribal input is received as "just another" public comment as opposed to professional judgment and recommendations from a cooperating/partnering agency with statutory authorities and government-to-government consultations.
8. State agencies that represent different authorities (e.g., natural resources, agriculture, water offices, and governors' offices) sometimes provide federal agencies with conflicting issues and comments.
9. Some state agencies and tribal governments lack wildlife population objectives (spatially referenced) to guide federal agency planning and decisions.
10. Due to lack of capacity, funding, knowledge, or the right tools, some federal, state, and tribal managers do not engage in collaborative and cooperative resource decision-making and implementation opportunities.
11. Previous decisions and land use allocations may preclude new collaborative opportunities without the development and use of new tools and techniques.
12. Conflicting laws, policy, and regulations may preclude collaborative discussions.
13. There is a lack of knowledge and understanding of the principles and philosophy of the North American Model of Wildlife Conservation by federal, state, and tribal employees.
14. A lack of common spatial language, incompatible data, and uncoordinated planning undermines successful regional landscape planning and conservation.
15. Working at a regional landscape scale is complicated by multiple jurisdictional authorities, funding, priorities, protection of "turf," and interdepartmental coordination.
16. Professional wildlife law enforcement is not widely recognized as an integral component of the North American Model of Wildlife Conservation.
17. An increasing lack of personal connection by agency employees and the public with the natural world hinders agency ability to successfully manage wildlife resources.

Consequences of Inaction

The lack of collaborative involvement of federal and state agencies and tribal governments to address the aforementioned challenges and achieve the stated goals will lead to wasted time and money; miscommunication; distrust; counterproductive, redundant, and/or conflicting efforts; and therefore ineffective conservation efforts at each level of government. Finite financial resources, staff, and time will not be used as effectively as possible to deliver wildlife conservation to the citizens of the nation. Given the nation's substantive and financial challenges regarding wildlife conservation, the North American Model of Wildlife Conservation will be impaired and may become imperiled. However, we have the opportunity to address these challenges in the coming years. We believe that collaborative processes exist and can be enhanced to improve the coordination among federal, state, and tribal resource agencies, thereby helping to sustain the model of wildlife conservation that is the envy of the world.

Opportunities

1. Ensure that federal agencies, state agencies, and tribal governments integrate the seven principles of the North American Model of Wildlife Conservation into resource management decision making.

- Federal and state agencies' and tribal governments' training for current and new employees should include a comprehensive instruction of the role that hunters and hunting has played in the development of the North American Model of Wildlife Conservation.
- University wildlife professors should be encouraged to include the North American Model of Wildlife Conservation within their natural resource curricula.
- Professional societies (The Wildlife Society, American Fisheries Society, Ecological Society of America, etc.) should include the North American Model of Wildlife Conservation in their educational service to their members.
- In order to promote and support the North American Model of Wildlife Conservation, agency directives should consider inclusion and references to the seven principles of the Model.
- National Conservation Training Center courses should be expanded to include active wildlife management and hunting principles.
- The National Conservation Leadership Institute and the Conservation Leaders for Tomorrow training programs should be continued and expanded.

2. Ensure that federal agencies, state agencies, and tribal governments regularly and routinely communicate and collaborate in resource management decision making, planning, and implementation in order to achieve seamless implementation and integration of wildlife objectives regardless of land status.
   - Require semi-annual meetings of pertinent federal and state wildlife agency and tribal government personnel to discuss upcoming planning, rules, land management activities, decisions, and opportunities to collaborate. Utilize existing structures where they exist, and supplement as necessary and include administrators, biologists, law enforcement, community outreach, and educators in meetings.
   - Identify and enhance existing resources or develop a new multi-agency regional clearinghouse to track ongoing planning and implementation efforts by federal and state wildlife agencies and tribal governments.
   - Develop a Web-based, personnel contact directory for federal and state wildlife agencies and tribal government staff who work on wildlife resource issues.
   - Develop budget incentives for collaboration and make Cooperative Conservation recognition a real award for individuals and teams at federal, state, and tribal levels.
   - Develop federal, state, and tribal collaborative strategy to demonstrate benefits to wildlife resources by fully funding the State and Federal Land and Water Conservation Fund.
   - Allocate funding commensurate with the costs and personnel demands related to managing wildlife resources and mitigating the impacts of resource commodity extraction.
3. Ensure that federal agencies, state agencies, and tribal governments collaborate in wildlife conservation efforts aimed at managing populations, habitat, and people to achieve landscape scale goals such as establishing wildlife population objectives; maintaining,

enhancing, and reestablishing migratory corridors for wildlife; and enhancing human access for wildlife-related recreation.

- Recognizing that scientific management is a key principle of the North American Model of Wildlife Conservation, Congress should provide funding to address the research and management needs related to landscape-scale wildlife objectives. This should include fully funding the Cooperative Research Units and providing funding to federal land management and state fish and wildlife agencies to implement landscape-scale management plans.
- Federal agencies should establish specific wildlife population and habitat goals and objectives in collaboration with tribal and state governments to enhance wildlife and habitats, with emphasis on important game species and species at risk.
- Awareness of federal, state, and tribal interdependencies makes landscape-scale cooperative conservation essential; therefore, consistent data collection and transfer should be supported and enhanced to facilitate more effective landscape-scale planning and management.

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Wildlife Habitat Conservation

Chair: D. Dessecker

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"To some the loss of range is neither a clear nor dramatic concept. Loss of range is homelessness. It can extirpate a species more effectively than a plague. It is no coincidence that great hunters have often been great conservationists, for it is things like these that hunters learn."

— Frances Hamerstrom

Problem Summary

Land and resource management projects conducted by federal agencies on federal lands can significantly affect the ability of states to attain or sustain fish and wildlife population goals—this is particularly the case in the western United States, where federal lands account for a significant proportion of the land base of most states.

Habitat conservation on private lands is a key to sustaining populations of game and nongame wildlife—this is particularly the case in the eastern United States, where most lands are in private ownership.

States have long been recognized as having primary responsibility for the conservation of resident fish and wildlife. Existing federal statutes (the Fish and Wildlife Coordination Act, the Sikes Act, the National Environmental Policy Act, the Federal Lands Policy and Management Act, the National Wildlife Refuge System Improvement Act, etc.) require coordination between federal agencies and state fish and wildlife agencies during project planning processes and throughout project implementation. However, wildlife habitat management activities on federal lands are often hindered by conflicting statutory and regulatory priorities that may be inconsistent with state agency wildlife population objectives. In addition, the potential impacts of proposed land management projects on federal lands commonly require that multiple federal agencies review and approve the proposed actions. In these instances, conflicting priorities within and between federal agencies combine with imperfect knowledge to complicate an assessment of the risks to wildlife of inaction versus the risks of action, which can delay or even preclude important habitat management projects.

Landscape fragmentation through the conversion of wild lands to suburban and urban development is a leading cause of wildlife habitat loss and degraded habitat function across the United States. Between 1992 and 1997, 5 million acres of forest were converted to developed areas (Alig et al. 2003). Estimates suggest that, by 2030, a significant increase in housing development could occur on an additional 44 million acres of forest in the continental United States; approximately 50% of this development is projected to occur within 10 miles of a national forest or

grassland (Stein et al. 2007). Development in what is termed the "wildland-urban interface" will dramatically increase the costs of wildfire suppression for state and federal agencies and thereby reduce the availability of funds for wildlife conservation. Development in this interface can also decrease active forest management on adjacent public lands, thus further degrading wildlife habitat.

Over the past decade, numerous large tracts of formerly industrial forestland have been purchased by timber investment management organizations and real estate investment trusts. These investment vehicles often have land management and economic objectives that are inconsistent with maintaining contiguous habitats for wildlife or with maintaining access for wildlife habitat management or for public hunting and other forms of recreation. These changes in ownership are driven primarily by market conditions and tax policies that create financial disincentives for maintaining working lands.

Wildlife habitat quality on millions of acres of public and private land is degraded or seriously threatened by insect infestation, disease outbreak, or encroachment by invasive plants. Dead and dying trees cover vast areas of the West as a result of insect infestations and/or disease outbreaks, which place these lands at serious risk from wildfires of uncharacteristically severe intensity. The vegetative composition of many rangelands has been significantly altered by the spread of spotted knapweed and cheatgrass, seriously degrading these important wildlife habitats. Wetland and riparian habitats throughout the country are at risk from exotics, such as purple loosestrife and tamarisk, which can drastically alter habitat structure and function.

Many individual state and federal monitoring initiatives provide snapshots of landscape status and change. However, comprehensive assessments of ongoing changes to our nation's wildlife habitats and the effects of these changes on game wildlife populations are not available. Some existing habitat evaluation processes were developed using data collected and assumptions derived from landscape conditions that vary significantly from today; conclusions based on these processes may no longer be valid. Adaptive management of our nation's wildlife resources on public and private lands requires the capability to adequately monitor habitat changes at spatial and temporal scales of relevance to target wildlife populations and the potential implications of these changes to these populations.

Forest Habitat Conservation

State wildlife action plans, regional bird conservation plans, and game bird conservation plans have documented the loss of biodiversity in the eastern United States due to declines in shrublands and young forest habitats. Reduced levels of vegetation management on U.S. Forest Service lands throughout the East have resulted in reduced availability of young forest habitats and disturbance-dependent forest types, such as aspen-birch and, to a lesser degree, oak (U.S. Forest Service Current). These habitats and forest types are important to many species of game and nongame wildlife. In February 2007, the American Bird Conservancy identified young deciduous forest habitats in the eastern United States as one of the nation's 20 most imperiled bird habitats (American Bird Conservancy 2007).

The oak forests of the eastern United States are critically important to many species of forest wildlife. Oak forest acreage in the eastern United States has declined from 112 million acres in 1985 to 85 million acres in 2005, a reduction of 27 million acres (24%) (U.S. Forest Service Current). Aspen forests are common only in the Great Lakes states of Michigan, Minnesota, and Wisconsin and in Maine and are declining across all ownerships, primarily as a result of declines in the use

of even-age forest management treatments. Aspen forests provide important habitats for ruffed grouse and American woodcock throughout the Great Lakes region and the Northeast (Dessecker and McAuley 2001). Both of these game species are experiencing population declines throughout much of the eastern United States (Dessecker et al. 2006, Woodcock Task Force 2007).

Approximately 70% of the timberland in the eastern United States is in nonindustrial private ownership. Birch (1996a) reported that privately owned forest tracts of less than 100 acres in size increased from 30.4 million acres (26.7% of private forestland) in 1978 to 56.6 million acres (43.6% of private forestland) in 1994. As the size of nonindustrial private forest tracts decreases, so does the likelihood of forest habitat management (Birch 1986, Roberts et al. 1986). Professional assistance can help private landowners avoid unintended poor management, yet only 4% of private forest landowners have an established management plan prepared by a natural resource professional (Birch 1996b).

Inadequate markets for small-diameter or low-grade forest products can complicate landowner efforts to maintain shade-intolerant forest types and young forest habitats. The emergence of technologies to create cellulosic ethanol from forest products as a key component of the nation's energy supply represents a significant opportunity to merge biodiversity conservation and energy independence.

White-tailed deer populations exceed state agency goals in many regions of the eastern United States. Opportunities to increase hunter harvest of deer and meet population objectives can be affected by restrictions on vehicular access—either seasonal or permanent—to federal lands. Likewise, the preclusion or strict limitation of hunter access to large tracts of private land can complicate efforts to maintain local white-tailed deer populations at desired levels.

In the West, reduced vegetation management and plant community succession have together diminished the abundance and productivity of early-successional habitats that regulate the reproductive potential of many wildlife species. The productivity of most big game populations is dependent on habitat and forage conditions on their summer ranges, which occur primarily on federal lands. Most of these ranges are successional, in that the adequacy of the forage base is dependent to a large extent on periodic disturbance, either natural or anthropogenic. Disturbance agents that can be used to manipulate wildlife habitats include fire, forest management, and regulated grazing by livestock.

Historically, frequent, large-scale disturbance from fire maintained early-successional habitats in the West, but neither the periodicity nor the magnitude of historical disturbance regimes has been replicated by recent habitat management on federal lands (Barrett et al. 1997, Kay 2007). On many landscapes, forage is no longer adequate on federal lands to maintain big game populations at historic levels. To restore and maintain big game populations and their productivity, disturbance (management) must be sufficiently recurrent and widespread to replenish nutritionally adequate forage that, in the absence of periodic disturbance, would otherwise be lost as the vegetation on the landscape matures through succession. Loss of summer range productivity on federal lands can be implicated in several problems of growing concern to states, including loss of hunter opportunity, participation and license revenue, reduced economic contributions from hunters to rural economies, loss of habitats of special conservation concern, and increased damage on adjacent private lands due to shifting wildlife distributions (Riggs et al. 2004, Riggs et al. 2000).

Enhanced cooperation between federal and state agencies could facilitate better public understanding of the role of active management in wildlife conservation and improve public support for the management of disturbance-dependent habitats and associated wildlife. Where

state objectives for game populations are not consistent with current landscape conditions or recent disturbance regimes, state agencies ultimately will need to reconcile these objectives with anticipated lower expectations for game wildlife carrying capacity on federal lands. Where big game populations are now contributing to deteriorating range conditions, these populations should be reduced to levels that will allow important early-successional habitats to successfully regenerate.

Federal habitat assessments and management planning processes should be conducted at spatial and temporal scales that are consistent with those at which game wildlife populations are managed by the states. This would not preclude smaller-scale assessments for other purposes. In addition, these assessments commonly fail to adequately articulate the relationships between declines in early-successional habitats and declines in game wildlife populations. There is a need to develop land management planning tools and processes that can better inform the public of the long-term implications to wildlife of potential land management decisions.

Wetland and Riparian Habitat Conservation

Wetlands in the United States are among the habitats most affected by the lack of clear, consistent statutory and regulatory guidance and protections. Although rates of wetland loss have slowed since the 1950s, the United States continues to annually lose over 80,000 acres of wetland habitats. Between the mid 1950s and 2004, the United States lost almost 17 million acres of wetlands (not including farm ponds and similar water bodies). Some areas (for example, California's Central Valley) have suffered losses exceeding 95% of the original wetlands, with other areas not far behind. Approximately 66% of the original wetlands in the nation's "duck factory," the Prairie Pothole Region, have been drained or filled. These wetland impacts have significantly reduced the capacity of the United States to produce and maintain populations of waterfowl and other wetland-associated wildlife, some of which provide significant hunting opportunity and associated economic benefits.

After years of progress in slowing wetland loss rates, current interpretations of U.S. Supreme Court decisions in 2001 and 2006 by the Environmental Protection Agency and the Army Corps of Engineers have had the effect of removing wetland protections that had been in place for more than 30 years as a result of the Clean Water Act. These interpretations have removed protection from 20 to 60 million acres of the remaining 100 million acres of wetlands in the nation.

Functional riparian areas provide unique and important habitats and travel corridors for many species of wildlife on many landscapes. Across the West, riparian habitats provide for the timely capture, storage, and release of water and provide important conditions to sustain healthy fish and wildlife populations. Although riparian habitats constitute only a minor component—estimated at less than 1%—of forest, shrub, and grasslands ecosystems in the western United States, approximately 80% of native wildlife species use riparian habitats at some time during the year. Many riparian areas have been altered by water development and use, domestic livestock grazing, mining, fire suppression, and the colonization and spread of invasive plant species.

Grassland Habitat Conservation

The Great Plains of North America once held 585 million acres of diverse prairie ecosystems, making it one of the largest and most productive grasslands in the world. Over the past 200 years, five factors have eliminated or significantly degraded most of these grasslands: (1) direct conversion to agriculture, (2) alterations from historic grazing regimes, (3) fire suppression, (4) structural habitat fragmentation, and (5) invasive species. Today, prairies of the Great Plains are

considered among North America's most endangered ecosystems (Samson and Knopf 1994, Noss et al. 1995); yet, relative to their size, status, and ecological value, these ecosystems are the least protected (World Conservation Monitoring Centre 1999).

The current rate of destruction and fragmentation on remaining grassland habitats has accelerated dramatically as a result of high commodity prices, genetically engineered crops, efficient herbicides, large and powerful farm equipment, interest in biofuels, oil and gas exploration, and interest in wind power. Plant and animal species that were once abundant are suffering significant declines throughout the Great Plains. Grassland-dependent birds are experiencing steeper population declines than any other group. Prairie grouse are declining precipitously, and many are listed as federally endangered, threatened, candidate species, petitioned for listing, or are in vastly depressed population numbers.

Conservation of grassland habitats is largely a private land issue. As a result, habitat conservation for grasslands will require the development of incentive programs that encourage private landowners to maintain or restore native prairie ecosystems and their natural disturbance regimes (i.e., fire and grazing). To be effective, these incentives must rival or exceed the economic opportunities that competing land uses provide. Federal financial support through Farm Bill programs and others should be linked and coordinated with state and regional grassland conservation efforts. Protection of grassland habitats should be a significant consideration in energy development.

Grassland ecosystems are diverse, and this diversity is a key component of functional landscapes needed to support the full complex of grassland-associated species. Prairie grouse respond to habitat conditions at landscape scales, have broad public support for both the hunting and viewing recreation they provide, and can serve as flagship species for prairie conservation. Conservation goals for these species have identified a need to maintain or restore 20% of the Great Plains to functional grassland diversity.

Sagebrush-Shrubland Habitat Conservation

Shrubland habitats dominated by sagebrush once occupied over 150 million acres of western North America but have declined in area by more than 50% since European settlement (Barbour and Billings 1988, Connelly et al. 2004). Sagebrush habitat loss and degradation is a result of urban and suburban development, conversion to agriculture, energy development and associated infrastructure, and exotic plants (Knick et al. 2003). Wisdom et al. (2005) identified 26 threats to sagebrush habitats that operate at varying spatial scales and thus can affect large landscapes.

Millions of acres of sagebrush habitats are threatened by the continued and widespread invasion of cheatgrass and other exotic plants, as well as by expansive encroachment of piñon and juniper woodlands. The rate of loss appears to be accelerating, and management intervention thus far has been ineffective in abating this loss (Hemstrom et al. 2002).

Populations of many sagebrush-associated wildlife species are declining in response to these habitat changes (Dobkin and Sauder 2004), and approximately 20 percent of the ecosystem's native flora and fauna are considered imperiled (Center for Science, Economics and Environment 2002). Estimated risks of regional extirpation for sagebrush-associated vertebrates, given current management regimes on public lands, are similar to risks for species in other ecosystems that are already listed as federally threatened or endangered (Raphael et al. 2001). Populations of many

species of big game and upland game birds are declining in sagebrush habitats. Populations of the greater sage-grouse have declined steadily over the latter half of the twentieth century as human activities have substantially reduced the quantity and quality of sagebrush habitats (Connelly et al. 2004).

Habitat Conservation on Agricultural Lands

Approximately 50% of the United States, or 900 million acres, is managed as cropland, pastureland, or ranchland. These working lands commonly include forest, rangeland, wetland, and riparian habitats that are the foundation for regional populations of game and nongame wildlife. In the mid 1980s, funding for fish and wildlife conservation first became available through the federal Farm Bill. The 2002 Farm Bill included over $17 billion in funding to support programs designed to enhance fish and wildlife habitats and address other pressing conservation needs. In addition, over $800 million is provided annually for technical assistance to private landowners to implement conservation programs, including fish and wildlife habitat.

Federal Farm Bill programs such as the Conservation Reserve Program, Wetlands Reserve Program, Grassland Reserve Program, Wildlife Habitat Incentives Program and the Environmental Quality Incentives Program provide financial incentives for landowners to establish and maintain important wildlife habitats by withdrawing lands from crop and forage production. Payment rates through these programs must be competitive with anticipated economic return from agricultural production, or else landowners will be unlikely to set aside significant acreages for wildlife habitat enhancement. Recent interest in biofuels has significantly changed these economic considerations. Grain-based and cellulosic ethanol offer opportunities to increase our nation's energy independence and benefit rural economies. However, the development of these new sources of energy on a finite land base must be balanced with the demonstrated wildlife habitat benefits derived from existing conservation programs. Any significant reduction in the acreage enrolled in existing conservation programs would negatively affect game and nongame wildlife populations and hunting opportunity.

Funding Availability

Costs to the U.S. Forest Service and the Bureau of Land Management to control wildfires in the United States have risen dramatically over the past decade, and these increases are likely to continue into the foreseeable future. As U.S. Forest Service wildfire costs increase at a more rapid rate than the overall agency budget, the proportion of funds available for wildlife habitat enhancement and other important programs continues to decrease. The proportion of the Forest Service discretionary budget spent on wildfire suppression has risen from 13% in 1991 to 48% in 2007. In addition, funds historically available for wildlife habitat management and other activities through the Knutsen-Vandenberg Fund have decreased dramatically as a result of significant declines in timber sale revenues.

Agency Culture

Fish and wildlife management agencies at both the federal and state levels will experience significant workforce turnover within the next decade. Approximately 40% of the federal workforce is beyond the age of 50 (Renewable Natural Resources Foundation 2003–2004). Within state agencies, 46% of employees in leadership roles and 27% of all employees are expected to retire

by 2010 (McMullin 2004). Wildlife professionals who have been in the profession for more than 10 years exhibit a slightly more positive orientation toward consumptive wildlife use than those professionals with 10 or fewer years of professional experience (Renewable Natural Resources Foundation 2003–2004). In addition, wildlife professionals employed by federal agencies are significantly less likely to participate in consumptive wildlife recreational activities than wildlife professionals employed by state agencies (Brown et al. 2006).

Goal

Ensure regular and effective collaboration between state fish and wildlife management agencies and federal land management agencies to restore and maintain wildlife habitats sufficient to maintain game wildlife populations at levels consistent with public expectations.

Challenges

1. Uncoordinated and sometimes conflicting federal land laws, regulations, and policies can complicate the efforts of federal agencies to implement land management projects.
2. State and federal agencies commonly have different wildlife habitat and population objectives, even on landscapes with intermixed holdings. These objectives may be poorly understood both within and among agencies, thereby complicating effective coordination.
3. Formal processes to facilitate effective communication and coordination between state and federal agencies are inconsistently utilized.
4. Reductions in the use of active habitat management, in conjunction with the interruption of natural disturbance regimes, has led to declines in the availability of early-successional habitat types at spatial and temporal scales that are consistent with wildlife population dynamics and management objectives.
5. Land and resource management planning processes can be too lengthy and technical to be readily understood by sportsmen, sportswomen, and other interested members of the public, thereby decreasing public participation in and support for these processes.
6. Inadequate state and federal agency budgets and increasing financial demands such as wildfire suppression decreases the availability of funds for research, educational outreach, habitat, and population monitoring and on-the-ground habitat management activities on public and private lands.
7. Existing habitat evaluation processes and associated game population modeling programs may no longer be relevant due to changes in landscape conditions and in our understanding of how these changes affect game wildlife populations. Evaluation and modeling programs for big game habitats in the West have become outdated as a result of new information regarding the nutritional dynamics of forest landscapes (see Appendix 7).
8. Native pest outbreaks resulting from unhealthy forest and range conditions and encroachment by invasive plant species across many vegetation types threatens the abundance and function of important wildlife habitats.
9. Current agency interpretation of the U.S. Supreme Court's Clean Water Act decisions has not been sufficiently protective of wetland habitats.

10. Rising prices for rural lands suitable for residential or commercial development can reduce the incentive for private landowners to maintain these lands in an undeveloped state available to wildlife.
11. Tax policies associated with the inheritance of private lands can promote ownership fragmentation and the resulting loss of wildlife habitats.
12. Rising prices for agricultural commodities can reduce the incentive for farmers and ranchers to enroll lands in federal Farm Bill conservation programs.
13. Private landowners do not consistently take advantage of opportunities to incorporate professional technical assistance into land management decisions for their properties.
14. Demographic and attitudinal changes of employees of federal and state land and resource management agencies may lead to reduced consideration of consumptive wildlife activities on public and private lands in the future.

Consequences of Inaction

The ability of federal and state fish and wildlife agencies to maintain wildlife habitats and populations at levels consistent with public expectations and to conserve imperiled species, on both public and private lands, will continue to erode.

Opportunities

1. Convene a panel of well-qualified natural resource management and legal professionals to conduct a rigorous assessment of the compatibility, or lack thereof, between existing federal environmental laws and regulations. The objective of this panel would be to identify conflicting direction and craft potential statutory and regulatory language to clarify these conflicts.
2. Enhance federal inter- and intra-agency communication during project planning and implementation on federal lands to resolve conflicting statutory and regulatory requirements and to expedite habitat management initiatives. Fully incorporate comparative ecological risk assessments into federal land management decisions, particularly those related to Endangered Species Act Section 7 consultations.
3. Establish protocols to promote regular and routine coordination between federal and state agencies so that state wildlife habitat and population objectives can be used to aid in the development and implementation of land management activities on federal lands.
4. Utilize projects designed to reduce wildfire fuel loads; provide woody biomass for nontraditional products, including biofuels; or to control invasive species to coordinate the spatial and temporal distribution of early-successional wildlife habitats consistent with the needs of game wildlife populations.
5. To enhance public participation and trust in project planning processes, use a consistent framework that will assess and clearly communicate the impacts of project proposals on game wildlife populations and hunting opportunity.
6. Ensure that federal and state fish and wildlife management agencies have adequate personnel and funding to meet the needs for research, educational outreach, habitat and

population monitoring, and on-the-ground habitat management activities on public and private lands.

7. Review existing habitat evaluation and population modeling processes in light of changing landscape conditions to verify or enhance their usefulness in game population management (see Appendix 7 for a specific example of how nutritional science could be used to benchmark big game population status and guide federal habitat assessments and plans). Establish new interdisciplinary monitoring, evaluation, and modeling programs to address deficiencies in current data collection.
8. Establish a collaborative framework to monitor the extent and severity of habitat loss and degradation resulting from outbreaks of native pests and diseases or invasive species encroachment. Develop a prioritization process to identify and address the most pressing threats.
9. Develop and implement a clear regulatory framework that reinstates strong federal protection for wetland habitats by rescinding existing guidance (post-Rapanos case decision) and restoring guidance that better protects isolated wetlands in a manner consistent with recent U.S. Supreme Court decisions.
10. Create financial incentives for private landowners that increase the economic value of lands maintained in an undeveloped state. These incentives could include but are not limited to the development of markets for nontraditional products, such as biomass for biofuel production, direct financial compensation, and tax relief. State and federal agencies should be encouraged to acquire ecologically significant private lands that are at risk of fragmentation or development.
11. Develop tax policies to minimize the likelihood of ownership fragmentation and habitat loss resulting from the inheritance of private lands.
12. Use existing federal authority to regularly review and modify payment rates associated with Farm Bill conservation programs to ensure that these rates remain competitive with market conditions. Establish disincentives for private landowners to convert important existing wildlife habitats to agricultural crop production.
13. Create and implement marketing strategies to better communicate the availability of existing programs designed to provide educational outreach and technical assistance for private landowners.
14. Establish training programs to ensure that all employees of federal land management agencies understand the historic and current roles of hunting in wildlife conservation and, where appropriate, to introduce employees to hunting and shooting sports.

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Coordinating Oil and Gas Development and Wildlife Conservation

Chair: S. Mealey

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Problem Summary

The August 16, 2007, Executive Order 13443, "Facilitation of Hunting Heritage and Wildlife Conservation," directs federal agencies, especially the Departments of the Interior and Agriculture "to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat." Success in this effort means expanding and enhancing the North American Model of Wildlife Conservation (Geist 2006), which depends on vibrant and resilient game species, populations, and habitats.

Energy development is a major wildlife concern in significant parts of several western states (especially Wyoming, Colorado, New Mexico, Utah, Montana, and North Dakota), which contain the largest onshore natural gas reserves in the nation. These areas also contain some of the best game/wildlife (and hunting) habitats in the West, and their future as prime habitat in the face of actual or potential energy development is uncertain.

The Bureau of Land Management (BLM) administers the energy minerals on these mostly federal lands following a minerals policy directed by six acts of Congress (the Mineral Leasing Act of 1920, as amended; the Domestic Minerals Program Extension Act of 1953; the Mining and Minerals Policy Act of 1970; the Federal Land Policy and Management Act of 1976; the National Materials and Minerals Policy, Research and Development Act of 1980; and the Energy Policy Act of 2005). As energy security concerns and energy prices continually increase, so does the national priority (as stated in the Energy Policy Act of 2005, Pub. L. No. 109-58; EPACT 2005) to expand the domestic production of oil and natural gas and encourage new energy minerals exploration.

With energy activities in the West increasing, concerns about maintaining game/wildlife species, populations, and habitats at the wildlife-energy interface are also increasing. Given the magnitude of present and anticipated energy development in the West, it is doubtful that game/wildlife species and associated habitat values can be maintained without increased interagency collaboration, reducing on-site habitat impacts and developing landscape-scale efforts to enhance habitats off site similar to the 2007 U.S. Department of the Interior's Healthy Lands Initiative (HLI). If improved collaboration and landscape-scale habitat efforts—including analysis and decision

making—are not implemented, it is unlikely that meaningful balance between energy development and wildlife and hunting can be maintained or achieved, the North American Model of Wildlife Conservation supported, and the intent of Executive Order 13443 fulfilled.

Goals

1. Manage the public lands in a manner that will protect the quality of environmental values and that will provide food and habitat for fish and wildlife (Federal Land Policy and Management Act of 1976).
2. Federal land management agencies (FLMAs) should maintain, restore, and enhance healthy lands for wildlife and their habitat while seeking enhanced energy security through domestic oil and natural gas production (HLI).
3. FLMAs should actively manage species to prevent listing under the Endangered Species Act and to ensure recovery for those species already listed (HLI).
4. FLMA management plans and decision documents for energy development projects should provide for habitats that support game/wildlife populations at current state wildlife agency planning levels as in the Record of Decision for the Pinedale Resource Management Plan (Bureau of Land Management 1988).
5. FLMAs should use and apply landscape-scale assessments and state wildlife action plans to identify game/wildlife species needs and conservation priorities to conserve game/wildlife species, populations, and habitats while ensuring access to energy resources (HLI).
6. The BLM should consider temporary deferral of fluid minerals leasing to preserve options for game/wildlife species, populations, and habitat conservation in specific areas (HLI) undergoing active land use planning with legitimate BLM-recognized resource concerns (Bureau of Land Management 2004).
7. FLMAs should emphasize landscape-scale assessments through cooperative conservation partnerships with other federal, state, private, and tribal partners to benefit the land they manage with special emphasis on State Wildlife Action Plan programs (HLI).
8. FLMAs should seek and obtain sufficient funding to support effective partnerships to implement landscape-scale initiatives to protect wildlife and restore habitat in energy interface areas and other areas where the conservation of wildlife and habitat may be inconsistent with energy development on public lands (HLI).
9. FLMAs and state wildlife agencies should maintain sufficient habitat on site, or off site if needed, to support all resident and migratory game species at populations providing reasonable hunting and fishing success throughout the energy development process; disturbed sites should be reclaimed to habitat standards that support predevelopment hunting opportunities (Executive Order 13443).

Challenges

1. Reforms were made in EPACT 2005 to encourage new exploration and expand domestic production of oil and natural gas. These have increased the challenges to the FLMA in

maintaining healthy lands for wildlife and habitat. On October 11, 2007, the Association of Fish and Wildlife Agencies (AFWA) Energy and Wildlife Policy Committee submitted comments to Congress offering suggestions for EPACT 2005 reforms to enable the BLM to better assess and mitigate negative impacts to wildlife from oil and gas exploration and development (Prukop and Cleveland 2007). Suggestions included:

- Continue operation of seven BLM Oil and Gas Pilot Offices through at least 2015.
- Increase the review time for Applications for Permits to Drill from 30 to 45 days to provide the BLM more time to adequately evaluate drilling applications and consider appropriate permit stipulations to protect wildlife species and their habitats.
- Ensure adequate site-specific analysis before issuing categorical exclusions for oil and gas development.
- Require annual federal agency consultation with state agencies to review new data, National Environmental Policy Act documents, etc., before new leasing offerings and decisions to avoid or mitigate impacts to wildlife, wildlife corridors, and crucial habitats.
- Support reclamation and bonding requirements.
- Create a dedicated recurring source of funding for the HLI.

2. The Western Governors' Association's (WGA's) February 2007 resolution (Western Governors' Association 2007a) and the subsequent Oil and Gas Working Group final report (Western Governors' Association 2007b) identify conflicts between energy development and wildlife and solution options. The federal leasing process as implemented was cited as a major barrier to wildlife conservation. Major findings of the report include the following:
   - Development of both new and existing oil and gas leases can create conflicts with other resource values and stakeholder preferences. The special needs of crucial habitat and wildlife corridors are key concerns.
   - Monitoring helps to achieve management objectives. Inadequate monitoring can have serious consequences for both wildlife and development.
   - Informed decisions about crucial habitat and wildlife corridors require new geospatial products, including GIS-based landscape assessments and maps that identify areas of potential conflict between wildlife and oil and gas development.
3. Federal funding for partnerships for landscape-scale habitat initiatives has not been sustained (e.g., HLI was funded at a relatively small percentage of the President's request in the 2008 Appropriations Act).
4. In a December 2007 letter to the Secretary of the Interior, the Sporting Conservation Council documented concerns about balancing energy development and wildlife on the Pinedale Anticline in Wyoming (Model 2007). Concerns included the BLM's response to state wildlife population goals and opportunities for temporary deferral of leasing in HLI areas to protect game/wildlife conservation options during active land use planning activities.
5. The Theodore Roosevelt Conservation Partnership has published *Energy FACTS for Fish and Wildlife* (Theodore Roosevelt Conservation Partnership 2007), which outlines

actions it believes are needed to better balance management of public lands for energy and fish and wildlife. Recommendations include the following:

- A long-term funding solution is needed to provide federal and state wildlife agencies with the means to manage habitats and populations affected by energy development.
- Energy development and wildlife and fish needs should be balanced on federal land.
- A conservation strategy should be developed for each major energy project.
- The leasing process should be changed to include wildlife and fish assessments before leasing.
- The federal government should improve coordination with all stakeholders.
- Science must be used to inform decisions.

Consequences of Inaction

Failure to fulfill the above goals and respond to these identified challenges will increase the uncertainty about the effects of energy development on game/wildlife and potentially increase the risks to game/wildlife populations and habitats. This increased risk and uncertainty could jeopardize the sustainability of game/wildlife populations, habitats, and hunting. Such risk and uncertainty could also jeopardize the North American Model of Wildlife Conservation and the ability to implement and fulfill the intent of Executive Order 13443.

Opportunities

1. In collaboration with state and tribal governments, FLMAs should establish specific game/wildlife population and habitat goals and objectives for energy development projects for inclusion in land management plans and related decision documents.
2. FLMA initiation/completion of pre-development, landscape-level wildlife/ecological assessments in energy development project areas should be a priority of the HLI program in each of the major HLI project areas.
3. FLMAs should immediately establish a landscape assessment task force to develop assessment standards and protocols for on- and off-site considerations, drawing on recent examples of success, including the Encana, BP, The Nature Conservancy, and the Jonah Interagency Office Partnership that produced the Off-Site Mitigation Plan for the Jonah Field based on the *Marxan* Habitat Model (Stroud 2007). A critical part of the standards and protocols would be consideration of the unique cooperative conservation partnerships appropriate to different types and scopes of assessments.
4. The BLM should immediately reemphasize the discretionary authority of the state directors to temporarily defer leasing of specific tracts of land with active land use planning activities involving legitimate BLM-recognized concerns (i.e., preserving game/wildlife conservation options pending completion of landscape assessments and related management plans and decisions).
5. FLMAs should establish a cooperative conservation partnership with the WGA to jointly explore the feasibility of implementing recommendations in the WGA Wildlife Corridors Initiative developed by the WGA Oil and Gas Working Group (Western Governors' Association 2007b).

6. FLMAs should invite AFWA and its Energy and Wildlife Policy Committee to jointly discuss its views of the needs and opportunities for refining EPACT 2005.

7. The Department of the Interior is to be commended for seeking $21.9 million for HLI in its FY 2009 budget. The Department should continue to seek full funding for this important initiative and other landscape-scale initiatives in new project areas.

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Climate Change and Wildlife

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Problem Summary

Executive Order 13443 directs federal agencies to "facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitats." This presents three challenges:

1. To improve the management of game species and their habitats,
2. To take actions that will help to sustain America's hunting heritage, and
3. Do these in the context of concern about global warming and its effects on game species, populations, and habitats.

This document suggests ways to move forward constructively to deal with these three interrelated concerns.

The nation's Climate Change Science Program (CCSP) provides valuable information on projected effects of climate change on wildlife habitats. However, it does not systematically and rigorously examine the present and future effects of climate change on specific game species, populations, and habitats and at management- and policy-relevant scales in response to mandates. Currently, U.S. resource management agencies have limited capability to document the likely effects of climate change on the North American Model of Wildlife Conservation and effectively respond to Executive Order 13443. The current CCSP is inadequate in scope. Changes in priorities of the CCSP are needed to enable federal natural resource and wildlife managers to respond effectively to the Executive Order and to adapt to climate change.

As stated earlier, Executive Order 13443, dated August 16, 2007, and titled "Facilitation of Hunting Heritage and Wildlife Conservation," directs federal agencies, especially the Departments of the Interior and Agriculture, "to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat." Success in this outcome means expanding and enhancing the North American Model of Wildlife Conservation (Geist 2006), which is dependent on vibrant and resilient game species, populations, and habitats, which are all greatly affected by climate—which on a global scale appears to be warming.

The Intergovernmental Panel on Climate Change's (IPCC's) Fourth Assessment Report, *Climate Change 2007: Synthesis Report* (IPCC 2007) notes that "warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level." The report notes further that "eleven of the past twelve years (1995–2006) rank among the twelve warmest years in the instrumental record of global surface temperature (since 1850)." On June 11, 2001, President George

W. Bush noted that "First we know the surface temperature of the earth is warming . . . . There is a natural greenhouse effect that contributes to warming . . . . And the National Academy of Sciences indicates that the increase is due in large part to human activity"(Connaughton and Marburger III 2007). On February 14, 2002, President Bush committed his Administration "to cutting our Nation's greenhouse gas intensity . . . by 18 percent over the next ten years. This will set America on a path to slow the growth of our greenhouse gas emissions and as science justifies, stop and then reverse the growth of emissions" (Connaughton and Marburger III 2007). The President also committed the United States to continued leadership on the issue, and through early 2007 had dedicated nearly $29 billion to advance climate-related science, technology, international assistance, and incentive programs.

The CCSP follows a July 2003 Strategic Plan (U.S. Global Change Research Program 2003) that sets broad direction for climate change research for the period 2003–2013. It also follows the May 2008 Revised Research Plan for the U.S. Climate Change Research Program that sets more detailed research direction for the period 2008–2010 (U.S. Global Change Research Program 2008). These plans were prepared in response to the U.S. Global Change Research Act of 1990 (Pub. L. No. 101-606, Nov. 16, 1990).

Chapter 8 of the 2003 Strategic Plan, titled "Ecosystems," sets the broad research agenda for climate change and ecosystem interactions. *Our Changing Planet: The U.S. Climate Change Science Program for FY 2008* (U.S. Global Change Research Program 2007) highlights recent research advances and future directions for climate change research in response to the Strategic Plan. The 2008 revised plan applies recent "lessons learned" to research over the next three years. All three documents present ambitious intents and useful outcomes for mostly coarse-scale, broad ecosystem–based questions relating generally to climate change and biogeochemical cycles and community ecology. The 2008 revised plan makes a strong point, however, that there is the need "for information at the regional to local scales that are pertinent to direct land and resource issues in order to support decision making."

None of the three documents has a significant focus on the present and future effects of climate warming on game species, populations and individuals, and their habitats. In addition to Executive Order 13443, accountability for game species, populations, and habitat has many mandates, including the Public Trust Doctrine, State Wildlife Action Plans, the Endangered Species Act, the Migratory Bird Treaty Act, the North American Waterfowl Management Plan, the National Forest Management Act, the Refuge Improvement Act, the National Marine Mammals Protection Act, and the Alaska National Interest Lands Conservation Act.

The current focus of the CCSP has increased our understanding of current physical changes in our climate and has allowed the development of a suite of models to project changes in physical parameters at very coarse scales. Unfortunately, that science has not been coupled with projected ecological changes in landscapes at scales that allow scientists and managers to examine systematically and rigorously the present and future effects of climate change on game species, populations, and habitats in response to the above mandates. More fundamentally, there is limited ability to document the effects of climate change on the North American Model of Wildlife Conservation and to respond to Executive Order 13443. In this regard, the current CCSP is limited in scope for both physical and biological responses to changing climate. Accordingly, the CCSP appears necessary but insufficient. Initial attempts to document the effects of climate change on public lands, wildlife, and wildlife habitats provide a foundation for the more detailed and policy-relevant suggestions we make here (Julius and West 2008).

Carbon emissions are rising rapidly all around the globe, with uncertain present and future effect on North American game species, populations, and habitat. Emissions in the United States are

rising, and they now account for approximately one quarter of the global total. But emissions from developing countries (e.g., China, India, Brazil, Mexico), are rising much faster. As human populations urbanize and modernize globally, their per capita emissions, now a fraction of U.S. per capita emissions, are quickly catching up. Growing global emissions are expected to accelerate the effects of climate change on North American game species, populations, and habitats. The need to understand and respond to those effects grows with time. A much sharper and very specific U.S. research and monitoring focus on the present and future effects of climate change on select game species, populations, and habitats and their adaptation to climate change is therefore greatly needed to preserve the North American Wildlife Management Model and to meet the intent of Executive Order 13443. In the following sections we identify the key climate-related goals that respond to the Executive Order, the challenges that must be resolved, and the opportunities for resolution.

Goals

Federal land management agencies supported by the CCSP, in cooperation with tribal, state, private, and international conservation partnerships should seek to

1. Preserve and enhance the conservation of sustainable populations of game species, populations, and habitats and the heritage of hunting in the face of climate change, with its likely effects on the abundance, distribution, and resilience of game species, populations, habitats, and associated patterns of use;
2. Identify game species most likely at risk due to current and anticipated climate change within the context of the North American Model of Wildlife Conservation;
3. Incorporate information on climate trends and projections into planning and decision making for game species management;
4. Develop and apply mitigation and adaptation strategies to sustain at-risk game species, populations, and habitats; and
5. Explore and develop funding strategies sufficient to meet the intent of Executive Order 13443 where game species, populations, and habitat may be affected by climate change.

The scope of the CCSP should be expanded to provide scientific support for determining the effects of climate change on game species, populations, and habitats and for developing monitoring and adaptation strategies. Expanded support should be in the form of

1. Research and modeling to develop
    a. Climate information (trends and projections) at scales that are useful to game/wildlife managers,
    b. Assessments of present and future effects of climate change on at-risk game species, populations, and habitats,
    c. Monitoring protocols and data sets that track the trends and enable adaptive management of at-risk game species, populations, and habitats,
    d. Models that integrate all of these inputs for use in wildlife management at scales that are relevant to policy and management,
    e. Verifiable methods of forecasting population and habitat changes for at-risk game species;

2. Information bases that are established, developed, and maintained to be readily usable by policy makers and that show the effects of climate change on at-risk game species, populations, and habitats.

Challenges

1. CCSP priorities and goals for adaptation to climate change focus primarily on broad, coarse-scale questions about general ecosystem function and effects. While some results relate to individual species populations and habitat (viewed from the systems perspective), most past and planned work relates to general systems ecology and climate change effects at the broad ecosystem level rather than at the game species population and habitat levels. Questions concerning game species, populations, and habitats are insufficiently addressed.

2. Climate change research partners that receive primary emphasis in the CCSP include the Ecosystems Interagency Working Group, made up of federal agencies and various international agencies (i.e., the International Geosphere-Biosphere Programme). State, private, university, and tribal partners are seldom if ever mentioned, indicating that conservation partnerships with these entities, which are capable of global change research at the game species population and habitat levels, are lacking or not emphasized.

3. Some emphasis on improving ecosystems observations and climate forecasting models was noted in the CCSP's fiscal year 2008 report (U.S. Global Change Research Program 2007). However, some priorities were not mentioned:

    - Improving forecasting models for specific game/wildlife species and habitat responses to climate change,

    - Developing information bases for tracking effects of climate change on specific game/wildlife species, and

    - Recording and sharing mitigation and adaptation strategies.

4. For most wildlife species, insufficient basic data have been gathered about population abundance and vital rates over time, age structure over time, and related data. Even less information has been gathered on these variables' responses to threats. Baseline data and monitoring programs are required to overcome this limitation.

5. Population models typically fail to take into account key environmental factors adequately. Many wildlife population models still only include population size as a variable, ignoring any other specific environmental variable. Improved models are required that take specific environmental variables into account, along with risk and uncertainty, both as environmental phenomena and as measurement errors.

6. Historically, forecasting of wildlife habitat, species, and population dynamics has been based on the concept that the future will echo the past, both in terms of climate and its variability and in terms of the relationships among species and of species with their habitats, as statistically described. Now, given the rapidity and uncertainties of future climate trends and variability, our sense of forecasting "certainty" no longer applies, and entirely new forecasting tools must be constructed. Stationarity is no longer a valid concept. We will never again have the sense of certainty that we used to incorrectly presume, but will have to develop new management tools and philosophies to manage under continuous, rapid change with considerable uncertainty.

7. Key ecological systems—including ocean habitats for anadromous fish and marine mammals and dry forested habitat vulnerable to uncharacteristic wildfire—are undergoing rapid change, with increasing uncertainty about the sustainability of these habitats for many game species, especially in light of recent climate change effects.
8. Other key ecological systems are under stress due to habitat loss, fragmentation, invasive species, and other factors. These stressors pose difficulties for game species populations and habitats to adapt to the rapid and widespread changes potentially brought about by climate change.
9. Traditional management approaches are not well suited to address the uncertainties associated with future climate change conditions. These uncertainties have been a barrier to implementing adaptive management strategies, and as a result such strategies have not been widely or successfully implemented.
10. Subsistence users in Alaska anticipate significant climate change effects on subsistence activities, including
    - Changes in the distribution and density of wildlife, which will have a direct effect on subsistence harvests, and
    - Disturbance of existing habitat and wildlife as the boreal forest intrudes farther north (Callaway et al. 1999).
11. Climate change and its impact on game species, populations, and habitats represent new research and management challenges that cannot be addressed with currently available funding sources.

Consequences of Inaction

Failure to fulfill the goals and resolve the challenges presented here will increase the current high degree of uncertainty about the effects of climate change on game species, populations, and habitats and potentially increase the risks to them. This increased risk and uncertainty could jeopardize their sustainability. Such risk and uncertainty could also greatly jeopardize the North American Model of Wildlife Conservation and the ability to implement and fulfill the intent of Executive Order 13443.

Opportunities

1. The CCSP should be expanded to include studies of the effects of climate change on at-risk game species, populations, and habitats.
    - Provide guidance on a periodic assessment process (e.g., characterization of at-risk species; regional and local scales for forecasting climate change effects; and engaging federal, state, tribal, private, and university partners/managers in the assessment process).
2. The federal government's climate change efforts should be expanded to include state, university, and tribal partnerships in determining effects of climate change on at-risk game species, populations, and habitat and in fulfilling the intent of Executive Order 13443.
    - Effects information should be made available for inclusion in the various agency management planning and decision-making processes.

- Mechanisms should be created for federal, state, and tribal wildlife managers to share climate change data (database coordination), research findings, and forecasting and other modeling projections.

3. The CCSP and other ecological and biological research efforts should emphasize development of future modeling and forecasting programs that link physical climate changes to biological responses of at-risk game species, populations, and habitats at scales needed by managers.*

4. Federal biological research and management entities should emphasize development of monitoring programs necessary and sufficient for incorporating climate change effects on at-risk game species, populations, and habitat. Programs should

   - Improve systematic observation and recording of species, population levels, and habitat data;
   - Utilize and strengthen ongoing inventories; and
   - Create new capacities for monitoring.

5. CCSP agencies and the natural resource management community should use expanded research partnerships to foster collaborative relationships (as in 2. above) among natural resource agencies to design, construct, and implement adaptation strategies for at-risk game species, populations, and habitats using adaptive management principles. Strategies could include, for example, those that allow for flexibility and rapid response in setting hunting seasons and bag limits for subsistence resources. Other strategies could include networks of large, widely distributed tracts of wildlife habitat, migration corridors, and habitat linkages that increase species resiliency (the ability to adapt to climate change) and reduce the effects of stressors.

6. Individually or together, the five opportunities in this section will require new funding. In response, U.S. carbon policy, in whatever form, should be designed to generate significant new revenues. For example, pending legislation (S. 2191; Leiberman/Warner) offers a concept for funding wildlife programs related to climate change (Sec. 4702-Adaptation Fund) by making funds available to the states through the Wildlife

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*Given the broad sources and diversity of uncertainties, scenario analysis offers a viable alternative to statistical forecasting. Multiple scenarios can be selected to attempt to sample the potential range of future uncertainties, but with no or conditional assignment of more or less likelihood to any given scenario. Traditional statistical forecasting assumes a certain "stationarity," or repeatability of past statistical variability. However, nonstationary approaches to statistical analysis that include trends and possible threshold effects could be used within the context of scenario analysis for forecasting potential future impacts. Within that range of uncertainties, *risk analysis* can be used to identify the relative potential for negative impacts on valued natural resources, species, populations, and habitats. Management alternatives could then be examined on the basis of "relative acceptability" of any given risk. For example, narrowly endemic species with low dispersal capabilities and little adaptive flexibility would likely be at greater risk of extinction under rapid climate change than would more "generalist" species with greater adaptive flexibility. It may be possible to identify functional groups or individual species that would most likely be "increasers" under climate change, while other groups might be "decreasers" under climate change. Thus, the potential "success" of restoration or conservation measures in a given locale might be differentially gauged for likely increasers versus decreasers.

Two examples of wildlife risk analysis using scenario analysis of potential future habitat based on simulations from a mechanistic model of vegetation distribution, growth, or dieback and drought and fire disturbances are listed under Literature Citations. The first is a published analysis of potential loss of sagebrush habitat in consideration of risk for the sage grouse (Neilson et al. 2005). The second is a recently completed study of potential snow and habitat change over North America in consideration of the potential risks of local extirpation of the Canadian lynx (Gonzalez et al. 2007).

Conservation and Restoration Account established under the Pittman-Robertson Wildlife Restoration Act. A carbon tax would be an alternative.

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Funding the North American Model of Wildlife Conservation in the United States

Chairs: John Baughman and Merle Shepard

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Problem Summary

In the history of American conservation, the period 1850–1900 is referred to as the "Era of Exploitation." Many species of wildlife were overharvested for subsistence and for sale to commercial markets for food, fur, and feathers. Their habitats were seriously degraded through unregulated logging, overgrazing, destructive mining practices, pollution of waterways, conversion of native habitat to agriculture, and many other disturbances. Around the turn of the twentieth century an American conservation ethic was galvanized through the leadership and efforts of progressive thinkers like Theodore Roosevelt, George Bird Grinnell, Gifford Pinchot, John Muir, C. Hart Merriam, George Perkins Marsh, John James Audubon, Charles Hallock, and William T. Hornaday, all of whom were involved in the sportsman-conservationist movement. They would lead the United States through the "Era of Protection" (1900–1929) and into the "Era of Game Management" (1930–1965), where harvest of wildlife became highly regulated and correction of abusive land management practices and restoration of degraded habitats began in earnest (Shaw 1985, Trefethen 1975, Regier 2001).

Through the U.S. Constitution, the states possess broad trustee and police powers over fish and wildlife within their borders, including fish and wildlife on federal lands within a state. Generally, states have delegated this responsibility to the state fish and wildlife agencies. During the early twentieth century, the state's management focus was on halting the decline of fish and game and restoring depleted populations through use of harvest regulations, law enforcement, and artificial propagation and stocking. Funding would always be a major issue and chronic problem for conservation.

Early on, sportsmen demanded a "user pays" system, where fish and wildlife conservation was funded with dedicated revenue from the sale of hunting and fishing licenses. In 1937, sportsmen's collective actions resulted in the passage of the Federal Aid in Wildlife Restoration Act (commonly known as the Pittman-Robertson Wildlife Restoration Act). This historic legislation established a "user pay-user benefit" program that is driven by a "self-imposed" tax on hunting firearms and ammunition (amendments in 1970 and 1972 extended this tax to pistols, revolvers, and most archery equipment). These taxes are levied to the manufacturers of the equipment and are collected nationally through the Internal Revenue Service, the Tariff and Taxation Bureau, or U.S. Customs, depending on the type and origin of the equipment. The collections are deposited into the Wildlife Restoration Account and are allocated by the U.S. Fish and Wildlife Service to every state fish

and wildlife agency (including U.S. territories) to support the management of the state's wildlife resources. The allocations are based on a formula that takes into account the number of licensed hunters and the geographic area of each state. The allocations are contingent on state governments agreeing not to divert hunting license revenue away from wildlife management activities.

In 1950, sportsmen expanded this user pay-user benefit funding mechanism to fisheries with the passage of the Federal Aid in Sport Fish Restoration Act (commonly known as the Dingell-Johnson Fishery Restoration Act). This legislation established an excise tax on most equipment used by anglers, with the collections deposited into a Sport Fish Restoration Account. The funds deposited into this account are allocated by the U.S. Fish and Wildlife Service to the states and territories based on the number of fishing licenses sold and the water area within the state. This legislation also assures that all funds collected through the sale of fishing licenses are spent on fishery management activities. Later amendments captured federal fuel taxes attributable to motorboat use for the Sport Fish Restoration Account.

With this dedicated funding stream, states were able to retain adequate staffs of well-trained employees, and in addition to law enforcement and fish stocking, state-level programs for public access and habitat management developed across the country. Thus began America's system of funding the North American Model of Wildlife Conservation, which links the hunter and angler and the industry they support with educated and trained natural resource management professionals. While there have been supplemental federal funding and increased grassroots support, this user pay-user benefit funding engine for implementing the North American Model of Wildlife Conservation in the United States has remained primarily unchanged for the past 75 years.

For most of the past century, the responsibility for funding the conservation of our nation's fish and wildlife resources has rested squarely on the shoulders of those who hunt, trap, fish, enjoy recreational shooting, and participate in recreational boating. This funding engine, fueled through hunting and fishing license fees and equipment purchases, is the mainstay of our nation's fish and wildlife conservation efforts. While these contributions have come from the small group of hunters and anglers, the much larger population of outdoor enthusiasts are enjoying the benefits of this conservation without contributing to the costs.

The costs of fish and wildlife conservation are increasing with inflation and with legal and public demands for new and expanded services. Professional managers and the organizations and individuals that support them have to address a large number of new pressures on the landscape that are rapidly changing the outlook for North America's fish and wildlife. Those changes include new energy demands and the global impacts of climate change, increasing consumption of natural resources, and changing demographics. At the same time, the group of people our country has relied on to fund fish and wildlife conservation for more than 100 years (hunters and anglers) are declining as a percentage of the population. These expanding demands and decreasing hunter and angler numbers may lead to a shortfall in license revenues to adequately address needs. Furthermore, the state/federal/sportsman/industry partnership that has driven the Wildlife and Sport Fish Restoration Programs for over half a century is aging and showing signs that it may not meet future needs.

Goals

- Expand hunter and angler participation numbers and the license and excise tax revenues available to state and tribal agencies to allow fish and wildlife conservation to grow with the public's demands on these resources.

- Identify and develop new sources of dedicated, long-term funding for state and tribal fish and wildlife agencies that will ensure adequate financial resources for diverse fish, wildlife, and habitat conservation needs.
- Broaden the public's political and economic support for fish and wildlife conservation in the twenty-first century.
- Expand public awareness of the North American Model of Wildlife Conservation and the funding engine that drives it in the United States.

Challenges

Sport Fish and Wildlife Restoration Acts

Over the past 75 years, these two important pieces of legislation have been the primary funding engine of the North American Model of Wildlife Conservation—totaling nearly $11 billion from excise taxes on sporting arms and ammunition, archery equipment, pistols and revolvers, fishing tackle, and gasoline excise taxes on outboard motor fuel. Additionally, these acts have protected the funds generated from the sale of hunting and fishing licenses for fish and wildlife management. Unfortunately, they are somewhat in need of updating, and the states' fish and wildlife management demands have outpaced the funds they are generating.

Industry support for these funding sources needs to be carefully evaluated, and alternatives that will ensure strong support for increased, reliable, long-term funding of state fish and wildlife agencies needs to be developed.

Traditional State Funding

Hunter and angler numbers are declining as a percentage of the overall population. Consequently, funding from license sales has failed to keep pace with resource management demands. Funding for fish and wildlife conservation needs to grow significantly to meet all of the states' statutory mandates. Opportunities to expand the responsibility for funding fish and wildlife conservation beyond hunters and anglers needs to be explored.

Public Awareness

Since 1937, the Wildlife and Sport Fish Restoration Acts have generated over $11 billion that has been used exclusively to protect and improve fish and wildlife habitats, manage their populations, and provide public places for hunting, fishing, wildlife observation, wildlife photography, and general enjoyment of the outdoors. Additionally, the states generate just over $1 billion annually from the sale of hunting and fishing licenses. Together this is by far the largest and most reliable long-term contribution to fish and wildlife conservation and has been the mainstay of our nation's conservation efforts. However, it has been made by a small percentage of the much larger population that enjoys the benefits of this conservation.

The vast majority of the public either is not at all aware of the contributions made by the hunting and fishing community or does not recognize that contribution as significant in the overall conservation of our nation's fish and wildlife resources (Duda et al. 1998). Most Americans believe that the primary funding for fish and wildlife resources comes from either state or federal general tax revenues. Even hunters, anglers, and recreational shooters and boaters are not well versed in the importance of the contribution made to fish and wildlife conservation when licenses or

equipment are purchased for use in their recreational pursuits (Duda et al. 1998). Similarly, the many manufacturers of equipment and gear that are taxed to support the programs have not been appropriately recognized for their significant contribution to conservation in America.

This lack of public awareness often creates unnecessary rifts among the various groups who benefit from the conservation actions supported with this funding. Nonconsumptive wildlife users (bird-watchers, outdoor enthusiasts, etc.) are often critical of the hunting community, unaware that dollars generated from hunting are responsible for preserving and making available their favorite bird-watching or hiking locations. The establishment of target shooting facilities on state property is often rejected as "incompatible" by the public without them realizing that recreational shooters made a significant contribution to the purchase of the property in question. Additionally, this lack of awareness by the public of this important contribution is also a significant impediment as states and federal agencies seek solutions to funding shortfalls.

To address this challenge, the hunting, angling, and recreational shooting and boating community (including the state fish and wildlife agencies and the U.S. Fish and Wildlife Service) need to embark on a comprehensive outreach effort designed to first educate ourselves on the importance of our contribution, and then educate the general public on that importance.

Federal Agency Appropriations

A number of federal agencies receive federally appropriated dollars for the purpose of fish, wildlife, and recreational management activities on their lands or that benefit their lands and/or advances their mission. The three most important federal land management agencies that interact and cooperate with state and tribal fish and wildlife agencies in advancing their respective management objectives are the Bureau of Land Management (BLM), the U.S. Forest Service (FS), and U.S. Fish and Wildlife Service (FWS).

BLM: When adjusted for inflation, the 1994 appropriation for the combined subactivities for wildlife management, threatened and endangered species, and riparian management totaled $67.2 million. In 2007, the comparable total was $71.4 million. Therefore, while the recreational and resource demands on BLM lands have increased significantly, their appropriations have increased by less than $4 million for these wildlife management subactivities in 14 years.

FS: When adjusted for inflation, the 1994 FS fish and wildlife management budget was $99.6 million. The comparable 2008 enacted appropriations was $132.4 million, comparable to $76.8 million in 1994 levels. Compounding this funding deficiency, the FS total budget had to absorb fire suppression costs, which increased from 13% in 1991 to 45% in 2008. Finally, in the President's budget, the 2009 FS request for fish and wildlife management activities is $117.6 million.

FWS: When adjusted for inflation, the 1995 FWS appropriation was $251 million for four subactivities directly related to fish and wildlife management (Migratory Bird Management, the North American Waterfowl Management Plan, and Refuge Operation and Maintenance). In 2008, the FWS received a total of $471.5 million.

While the FWS has seen significant increases for their activities, funding for the wildlife management activities of the two largest federal land management agencies has either remained nearly static (BLM) or has declined (FS).

These federal agencies will face further budget constraints and demands on their fish and wildlife management objectives from invasive species, urban sprawl, and fire and water management, among other issues. As these demands increase, the ability of these federal agencies to interact with

state fish and wildlife agencies to advance cooperative fish and wildlife management objectives will become strained even more as their resources become more limited, not only due to budget constraints but to increased regulatory and permitting demands as well as litigation costs. In light of this, an increased focus on well-integrated resource management planning and implementation can and should benefit wildlife habitat improvement.

There is a need for increased federal appropriations for these important federal land management agencies.

Nontraditional Funding Sources

As the obligations have increased and the challenges to fish and wildlife conservation have evolved, the limitations of the user pay-user benefit model become increasingly apparent. In response to these limitations, wildlife conservationists have advanced a range of initiatives at the state (McKinney et al. 2005) and federal levels to enhance wildlife conservation funding and help broaden the financial base for wildlife management. These alternate sources of funding have included:

- Voluntary income tax checkoffs
- Vanity license plates
- State lottery funds
- Private donations
- Dedicated portion of state sales tax
- State sales tax from outdoor equipment
- Real estate transfer fees
- Supporting foundations for state and federal conservation programs
- Wildlife Conservation Restoration Program
- Landowner Incentive Program
- State Wildlife Grants Program

While some of these nontraditional sources of funding have generated significant, sustainable funding for wildlife conservation, many have not. And the majority of state wildlife agencies have no funding beyond license revenue, sport fish and wildlife restoration money, and state wildlife grants for fish and wildlife conservation. To meet the public's demands and to conserve fish and wildlife resources in the future, it will be essential for every state to have a significant, sustainable source of nontraditional funding.

Consequences of Inaction

The costs for programs to conserve fish and wildlife resources already exceed available funding. The consequences of inaction will be a continuation and worsening of trends that are already becoming apparent. Active conservation—the maintenance and enhancement of fish and wildlife resources—requires discretionary spending for habitat protection and restoration; maintenance and development of public access; applied research; actions to protect at-risk species before they become threatened or endangered; availability of adequate baseline data and monitoring as a

basis for well-informed, scientific-based decisions; and many routine functions, such as setting regulations and law enforcement. As funds become scarce, maintenance backlogs develop, law enforcement efforts are reduced, core functions suffer, and personal contact with constituents declines. The result is less-than-satisfactory performance of the agency's fish and wildlife management responsibilities, performance that falls short of meeting public demands.

Likewise, access to and across private lands will continue to decrease, leading to lower recruitment of new hunters, anglers, and wildlife enthusiasts. This may eventually result in lower participation rates; declines in traditional funding from license sales; loss of hunting, shooting, and angling industry support; and less political support for conservation of fish, wildlife, and habitat. Programs to acquire key habitats, enter into conservation agreements with private landowners and corporations, and to physically maintain and restore habitat may be seriously curtailed. Fish and wildlife populations and the ecological systems they depend on may enter a long-term trend of decline.

A higher percentage of funds will be directed toward maintenance of agency infrastructure, such as personnel and facilities, and for legally directed expenditures, such as listing threatened and endangered species, completing environmental documents, and issuing permits. Environmental analysis will often be conducted with inadequate information. Baseline information collected and subsequent monitoring will focus primarily on the project areas proposed by others rather than adequate, comprehensive surveys of all resources. The ability to identify and restore fish and wildlife and habitats at risk will decline, and more species will become listed as threatened and endangered. The regulatory burden from more threatened and endangered species may increase, while the hope for recovering any of these species virtually disappears.

Declines in fish and wildlife populations and their habitat and in hunting, fishing, and other forms of wildlife-associated recreation may lead to serious economic impacts nationwide. In 2006, more than 87.5 million Americans age 16 and older participated in hunting, fishing, and wildlife-associated recreation, spending over $122 billion (U.S. Fish and Wildlife Service 2006). Substantial social impacts, including the loss of our hunting, fishing, and outdoor heritage and a growing disconnect between people and the natural world may also occur (Louv 2005).

Opportunities

The traditional sources of fish and wildlife conservation funding—receipts from hunting and fishing licenses, federal taxes on hunting and fishing equipment and motorboat fuel, and annual appropriations—have supported the American Model of Wildlife Conservation in our nation for the past century. With the public's demand for expanded and diversified conservation programs, coupled with a decline in hunters and anglers as a percentage of the U.S. population, traditional funding sources will be inadequate to support future fish and wildlife conservation programs.

The following actions are recommended in order to address these challenges and accomplish the goals.

- Expand hunter and angler participation numbers and the license and excise tax revenues available to state and tribal agencies to allow fish and wildlife conservation to grow with the public's demands on these resources.
- Broaden the classes of products subject to excise taxes.
- Capture additional portions of the highway gas tax for the wildlife restoration account (snowmobiles, ATVs, etc.)

- Solicit corporate sponsorships to provide licenses for youths.
- Institute duties on all imported hunting and fishing products to support wildlife funding.
- Appoint a committee of sportsmen, industry, state and federal agencies, and congressional staff to evaluate the current economic health and revenue collection processes of the Sport Fish and Wildlife Restoration Programs and provide recommendations for improvement to Congress and the Administration.
- Develop more expertise within the FWS on excise tax compliance and enforcement.
- Identify and develop new sources of dedicated, long-term funding for state and tribal fish and wildlife agencies that will ensure adequate financial resources for diverse fish, wildlife, and habitat conservation needs.
- Generate new sources of revenue within state fish and wildlife agencies (bottle taxes, product sales, impact fees, transaction fees, etc.)
- Develop federal incentives for states to develop additional sources of revenue that support habitat and conservation funds.
- Provide funding to state fish and wildlife agencies for loss of revenue due to the decrease in hunting (similar to funding to support rural schools).
- Explore opportunities with states in the use of lottery and gaming revenues to support fish and wildlife resource management.
- Dedicate a portion of any climate change mitigation funds to support a wildlife restoration account (see "Climate Change and Wildlife," page 49, this volume).
- Provide tax relief/credit for privately funded projects that contribute to the goals of state wildlife action plans.
- Create a mechanism to encourage and receive voluntary contributions to the Sport Fish and Wildlife Restoration account.
- Dedicate a percentage of income derived from offshore and onshore oil and gas development to benefit wildlife management for state fish and wildlife agencies.
- Develop a new federal program similar to the North American Wetlands Conservation Act to enhance upland wildlife habitat.
- Broaden the public's political and economic support for fish and wildlife conservation in the twenty-first century (see "The North American Model of Wildlife Conservation: Enduring Achievement and Legacy," page 7, this volume).
- Teach the North American Model of Wildlife Conservation in history classes within all American schools (see "The North American Model of Wildlife Conservation: Enduring Achievement and Legacy," page 7, this volume).
- Develop a shooting sports and hunting foundation for outreach efforts, similar to the Recreational Boating and Fishing Foundation.
- Require a federal public lands access permit for all users of BLM, FS, and FWS lands with revenue dedicated to habitat conservation. A state hunting/fishing license or federal Migratory Bird Stamp could be purchased in lieu of this permit.

- Dedicate portions of the America the Beautiful Pass (or other existing permits) to habitat conservation.
- Expand public awareness of the North American Model of Wildlife Conservation and the funding engine that drives it in the United States (see "The North American Model of Wildlife Conservation: Enduring Achievement and Legacy," page 7, this volume).
- Work with retail and manufacturing hunting and angling industries to develop an outreach program to emphasize the consumers' economic contribution to the North American Model of Wildlife Conservation.
- Work with industry to brand the Wildlife Restoration Program through marketing initiatives.
- Identify industry champions to help expand revenue for the Wildlife Restoration Program.
- Develop a marketing program that uses traditional and nontraditional media to promote the efforts of sportsmen.
- Develop a funding mechanism to support the Sporting Conservation Council, similar to Sport Fish and Boating Partnership Council support from the Sport Fish Restoration Program.
- Include information about the funding sources for the North American Model of Wildlife Conservation within an outreach program similar to that of the Recreational Boating and Fishing Foundation.

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Preserving the Tradition of Hunting: Education, Recruitment, and Retention

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Problem Summary

Participation in hunting has been declining in the United States for more than two decades. Between 1990 and 2005, participation in hunting declined by 4.4%, continuing a trend of decline between 1980 and 1991 (from 10.3% of Americans age 16 or older hunting to 7.4%, respectively; U.S. Fish and Wildlife Service 1982, 1993, 2006). This is part of a larger trend away from nature-based recreation of almost all types (Pergams and Zaradic 2008) and a nationally recognized, growing disconnect between children and nature (Louv 2006). On average, working American men increased their time in leisure activities by 6–9 hours per week between 1965 and 2003 (Aguiar and Hurst 2007); however, competition for time among the wide array of leisure opportunities results in even greater pressure against allocating time for hunting and shooting sports (Responsive Management/National Shooting Sports Foundation 2008). Indeed, primary reasons for not hunting (inactive for 3 years or less) include "not enough time" (44%), "family and work obligations" (46%), and "health/disability" (14%) (U.S. Fish and Wildlife Service 2007).

Contributing to the change in the social landscape is an aging U.S. population—those age 55 and older increased by 13% from 2000 to 2005, to 67.1 million people (U.S. Census Bureau 2008c). Further, the U.S. population is projected to increase from 282 million in 2000 to 420 million by 2050 (U.S. Census Bureau 2004). The changing family structure reflects further modifications to the U.S. social structure. In 2006, for example, 67% of children ages 0–17 lived with two married parents, down from 77% in 1980 (Federal Interagency Forum on Child and Family Statistics 2007).

Hunters, trappers, and anglers provide critical sources of revenue for the management of fish and wildlife resources. This revenue largely comes from license sales and excise taxes on equipment used in the sports. In addition to their financial contributions to resource management, sportsmen and sportswomen have traditionally formed the backbone of organizations that provided political support for policies based on the North American Model of Wildlife Conservation. Failure to reduce the decline in the trend will reduce the funding available to federal and state agencies as well as nongovermental organizations (NGOs), with a subsequent decline in wildlife habitat and outdoor experience opportunities.

Hunters, trappers, and anglers have traditionally entered these activities via socialization by family and close friends (O'Leary et al. 1987, Langenau and Mellon 1980). The social structures in support of hunting and recreational shooting traditions have eroded, however, as the U.S. populace has shifted from a rural to an urban culture (Duda et al. 1995). In 2005, 83% of the U.S. population

lived in metro areas (one or more counties of 50,000 or more people), 10% in micro areas (at least one urban cluster of 10,000–49,000), and the remainder outside of core-based statistical areas (U.S. Census Bureau 2008a). The Midwest had the smallest proportion of the population living in metro areas (75%); however, even there the nature of residence has changed. In Missouri, for example, "open-country" living increased at a rate greater than residence in cities and towns during the 1990s (8.1% versus 12.3%, respectively) and increased in all but 17 of the state's 93 rural counties—71% of Missouri's population growth occurred outside of town borders (Brookings Institution 2002). Increases in "exurban" residents resulted in a redistribution of jobs, land development (e.g., conversion of 680 square miles of rural lands to residential use), and infrastructure needed to support the increasing rural population. Repercussions from this change include loss of farmland, reduced hunting and fishing spots, crowded roads, eroded scenery, fragmented landscapes, and reduced water quality.

As society becomes more urbanized and as urbanites have reduced ties to rural settings, the opportunities to be socialized into outdoor activities have declined (Decker et al. 1984, 1992, Duda et al. 1998, Wentz and Seng 2000). The mobile nature of our society is exemplified by the rate of annual changes of address. For example, of the 287.1 million people age 1 and older who constituted the U.S. population in 2005, 39.9 million lived at a different address in 2004, with 29% of adults ages 20–29 moving between 2004 and 2005 (U.S. Census Bureau 2008c). As families scatter across the landscape for economic opportunity or retirement, the ability to retain hunters and recruit others into hunting traditions is lessened.

Although rural upbringing contributes to a propensity to hunt among males, other factors—such as gender and availability of a parent or mentor who hunts—also play a role in hunter recruitment (Stedman and Heberlein 2001). Participation in these activities by women and minorities has historically been very low. The most recent survey results show that about 9% of hunters are women; only 1% of women hunt (U.S. Fish and Wildlife Service 2006).

Education programs are vital to the preservation of hunting traditions. A variety of programs aimed primarily at youth and women have demonstrated that North Americans are still interested in learning traditional hunting and fishing skills. These programs offer women and youth opportunities to learn skills outside the traditional family setting. They have been successful in increasing participation in traditional hunting, have increased sale of licenses and equipment, and have increased the interest of participants in natural resource management (Lueck and Thomas 1997). Recent information suggests, however, that greater structure in youth activities will be required to engage the next generation of hunters. Despite the obvious need to increase attention to youth and women in hunting, middle-aged adults also constitute a significant source of new hunters and shooters, with at least one third of first-time hunters and anglers being more than 20 years of age (U.S. Fish and Wildlife Service 2007).

The programs that have provided effective educational opportunity are expensive, labor- and equipment-intensive, and competitive with one another for limited funding. In order to be successful, programs need to be supported over the long term and be aimed at audiences that either have infrastructure (meaning family, friends, and access to land and equipment) in their lives, or provide that infrastructure beyond the initial skills learning phase (Seng et al. 2007). While much of this discussion has focused on future participants, knowledge and acceptance by the general public of hunting and wildlife management is critical to maintaining hunting traditions. Education is a key influence on the attitudes and behavior of citizens.

The foundation for support in the wildlife profession also has eroded. Participation by Wildlife Society members declined significantly during the decade after 1994 in "consumptive" activities

such as small game hunting and bait and lure fishing as well as "nonconsumptive" activities, such as birdwatching and feeding wild animals or birds (Brown et al. 2006). An aging leadership within agencies also threatens retention of the foundation within the natural resource profession to ensure the future of the North American Model of Wildlife Conservation. McMullin and Stout (2005) reported that 27.2 % of conservation professionals plan to retire by 2010; among leadership positions this was nearly half (46.1%) and is projected to exceed three fourths by 2015 (76.7%). While this presents opportunities in natural resources careers, the skills needed to address contemporary conservation challenges have changed (San Julian and Yeager 2002), and questions arise about the tendency of new hires to embrace a traditional culture linked to the North American Model of Wildlife Conservation (Muth et al. 2002). With the advancing age structure in state and federal resource agencies, a primary concern has been the loss of core competencies, leadership skills, and institutional memory (McMullin and Stout 2005, Colker 2005).

The academic training needed to develop conservation leadership is also in a crisis situation. In a survey of U.S. and Canadian universities, Kaminski (2002) found that nearly two thirds (65%) of faculty with waterfowl expertise were greater than 45 years of age, and only half (53%) would be replaced in-kind by university administration if waterfowl positions were vacated. Reasons for not replacing waterfowl expertise included a shift from wildlife emphasis to conservation biology, from single-species orientation to more general expertise, and lack of funding. A renewed commitment to education and educators will be essential to the future of wildlife management.

Goals

1. Increase participation in hunting and recreational shooting in the United States.
2. Identify, aggressively deliver, and fund sustainable, effective programs that educate, recruit, and retain participants.
3. Establish the institutional framework required for effective education, recruitment, and retention efforts.
4. Create the conduit for hunting and recreational shooting recruitment and retention by focusing programs and initiatives on skills (social and technical) development and competence in a social environment of hunting and recreational shooting.
5. Emphasize development and organization of mentors to pass on hunting skills and ethics to youth and other nonparticipants as essential elements in the social structure of hunting traditions. The near-term goal is to develop and retain a pool of skilled and respected mentors, and the long-term goal is to emphasize recruitment of youth into hunting traditions.
6. Ensure that the rich traditions of hunting and the North American Model of Wildlife Conservation in support of conservation are viewed as a vital part of conservation agency culture and university programs in natural resources. Conservation leaders and educators must understand, support, and expect this in the future. As catalysts to active involvement, agencies and NGOs must work in harmony to invite participation.
7. Ensure that the rich traditions of hunting and the North American Model of Wildlife Conservation are viewed by the public, including nonhunters, as a vital part of our heritage.
8. Ensure that access to hunting and recreational shooting areas and information about hunting and shooting opportunities are available and do not serve as barriers to

participation. To the degree possible, remove barriers presented by "not enough time," "family and work obligations," and "health/disability" through hunting and shooting initiatives that increase access to hunting and shooting information.

9. Base initiatives to recruit and retain hunters and recreational shooters on reliable information about wants and desires of potential hunters and shooters, and annually evaluate programs to adapt to changing social landscapes. Research and evaluation concurrent with implementation of new initiatives to preserve hunting and shooting traditions will be essential.
10. Reestablish shooting as a mainstream recreational opportunity for youth.
11. Develop the capacity for recruitment and retention of hunting and recreational shooting among local groups and NGOs.

Challenges

1. Funding and institutional frameworks are not adequate to support education, recruitment, and retention efforts needed to counteract the downward trends in participation.
2. There are insufficient numbers of trained professional and volunteer educators to ensure understanding and appreciation of the North American Model of Wildlife Conservation.
3. Passive and "quick fix" solutions to the education process and challenges of recruitment and retention have characterized approaches to date. To be successful, programs will likely be expensive, labor-intensive, and require a long-term commitment of funding and energy. Traditional approaches to preserving hunting traditions will not be effective in contemporary society. Additionally, hunting opportunity and social structures are not the same throughout the United States, and solutions to the challenge of preserving hunting traditions will be heterogeneous as well.
4. Hunting and recreational shooting as a mainstream activity of youth will not be achieved if hunting and shooting is not an important and predominant part of family and peer networks.
5. Complex and at times insignificant regulations (developed without stakeholder input), requirements for licenses, and hunting education mandates may increasingly become barriers if the social structure and management culture do support entry into hunting and shooting.
6. There is a reluctance to integrate hunting into the culture of conservation agencies. Further, agency support for recruitment and retention is likely to erode as the demographics of conservation leadership change.
7. The availability of and distance to places to hunt and shoot, regimentation on public lands, and competition for uses all limit access to hunting and shooting opportunities.
8. Agencies have not made a high priority of using the wealth of data available to monitor and evaluate hunter recruitment and retention efforts or to develop new solutions for declining hunter recruitment and retention. Lack of capturing detailed, consistent, and timely reporting of shooting- and hunting-related incidents to convince the public of the safety of youth hunting and shooting.

9. Lack of coordinated effort among agencies, NGOs, and industries to address hunter and recreational shooter recruitment and retention.

Consequences of Inaction

1. Failure to stop the decline in the numbers of hunters and shooters will result in the failure of the North American Model of Wildlife Conservation.
2. Funding for conservation programs and initiatives through license sales, Pittman-Robertson funds, and other revenue sources will be reduced.
3. Failure to preserve hunting and shooting traditions through recruitment and retention will result in fewer wildlife conservation efforts.
4. Hunting traditions and the associated "connection to the land" will be eroded, along with citizens' awareness and understanding of the need for a conservation ethic.
5. Without hunting traditions, an important tool for wildlife management will also be gradually lost during a time when it has become increasingly important (e.g., management of overabundant species and conflict).
6. Without recruiting and retaining hunters who are willing to participate in urban wildlife management, there is a possibility of an erosion of public appreciation for wildlife, and management may be relegated to integrated pest management.
7. Without recruitment and retention strategies, resource agencies may lose the political support for conservation.

Opportunities

1. Provide sufficient and assured funding (e.g., comparable to that of the Recreational Boating and Fishing Foundation) and establish the institutional framework and priorities for education, recruitment, and retention.
2. Deliver educational programs through local partners using best practices. Nationally disseminate educational programs for natural resource students as well as state and federal conservation agency personnel will ensure an understanding and appreciation of the North American Model of Wildlife Conservation and its relevance.
3. Seek visible Executive endorsement for Americans' involvement in natural resource–based recreational activities (similar to President John F. Kennedy's President's Council on Physical Fitness and Sports) and engage influential people as spokespersons in support of the North American Model of Wildlife Conservation.
4. Incorporate into environmental literacy, through the U.S. Department of Education or other agencies, the role and relevancy of the North American Model of Wildlife Conservation.
5. Issue directives to federal land management agencies, including the U.S. Department of Defense, to facilitate an increased number of structured hunting and shooting events on federal lands and integrate the North American Model of Wildlife Conservation into educational exhibits and programs at federal land management agency visitor contact points.
6. Commit to annual evaluation of progress toward increasing recruitment and retention.

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Perpetuating Hunter Traditions: Access to Public and Private Lands

Chair and Author: S. Recce

Problem Summary

Hunting and recreational shooting with firearms and archery equipment are important elements of America's outdoor heritage. Opportunities to engage in these activities are dependent on public access to federal, state, and private lands. Constraints on access have been identified as one of the leading impediments to sustaining and developing participation in these activities. Where adequate public access is not provided to public lands, recreational opportunities are forgone; where access once was allowed and is now closed, participation diminishes due to lack of alternatives and reduction of recreational opportunities. The most notable problems are as follows:

1. There is a lack of consistent and easy access to information about what lands are open to hunting and recreational shooting, including identification of boundaries between open and closed areas and between public and private lands.

2. There is inadequate public access to millions of acres of federal lands. Federal lands are extremely important in providing hunting opportunities (4.9 million people hunted on federal lands in 2006). These opportunities can be significantly increased with improved access to millions of acres managed by the U.S. Forest Service (FS), U.S. Fish and Wildlife Service (FWS), the Bureau of Land Management (BLM), the Bureau of Reclamation (BoR), and the National Park Service (NPS).

3. Federal land management agencies (as listed above), along with the Departments of Defense (DOD) and Energy (DOE), may not have been tapped for their full potential to provide opportunities for sportsmen, including lands being transferred out of the DOD.

4. There is no unified approach to addressing the special access needs of senior and disabled hunters and shooters.

5. There is inadequate agency planning for the designation, maintenance, and management of shooting areas or ranges, resulting in the closure of public lands to shooting. Closures have been based on safety and environmental concerns, liability risks, resource impacts, user conflicts, suburban sprawl, anti-gun sentiments, sound levels, zoning ordinances, land prices, and other management concerns. Many closures could be avoided by cooperative efforts based on a proactive, supportive attitude. Similar issues exist regarding state- and county-owned lands.

6. There is a decline in access to private lands due to development and a paradigm shift in new landowners allowing access and concerns over liability. While leasing hunting clubs and private game ranches may be part of the hunting tradition in some areas and may be

beneficial for hunting and improved land stewardship, this trend has generally resulted in less hunting access and opportunities for a wide array of hunters.

7. Fragmentation of rural lands into smaller parcels creates smaller hunting areas, reduces the number of people able to participate, increases the proximity of rural areas to developed areas, and increases user conflicts.

8. Existing policies or laws limit or restrict access to federal lands for hunting and trapping (i.e., The National Wildlife Refuge System Administration Act of 1966 stipulates that only 40% of refuges designated as an inviolate sanctuary for migratory birds may be opened to migratory bird hunting).

9. Opportunities to make state- and federally funded conservation easements attractive to private landowners have been missed.

Goals

1. Work with state and federal agencies and the shooting sports community to improve the quality and availability of information on access to public and private lands to hunters and shooters. Actions include the following:

    a. Develop an interagency integrated mapping template using a Google Earth polygon or similar format to access mapping databases that will display hunting and shooting opportunities, including opportunities for individuals who are disabled, and identify land boundaries.

    b. Improve agency Web sites to provide useful information to hunters and recreational shooters including maps, camping sites, access points, shooting areas/ranges, wildlife species available for hunting, and rules and regulations.

    c. Prioritize funding for signage of designated travel routes, public land boundaries, and printing of travel maps to improve information for hunters and recreational shooters.

    d. Evaluate funding needs under the Transportation Act for roads, trails, signage, and roads and trails maintenance that would improve access for hunters and shooters.

2. Work with state and federal agencies to expand and improve access on public and private lands. Actions include the following:

    a. Define what access means to the hunting and shooting community. How much access is enough? What is the right balance between motorized and nonmotorized access? How should access be addressed in terms of distances to be traveled and needs of seniors and individuals who are disabled?

    b. Ensure that access to hunting and recreational shooting opportunities is addressed in land, resource, and travel management plans. Require that these plans adequately analyze and address the effects of management alternatives on hunting and recreational shooting access.

    c. Address game retrieval issues in travel management plans. Evaluate the effects on motorized and nonmotorized hunting due to restrictions on off-highway vehicle use for game retrieval.

d. Develop partnerships with the DOD, DOE, and BoR to determine what lands could be accessed by hunters and recreational shooters.

e. Develop partnerships with the U.S. Department of Transportation to provide access to public lands by establishing trails and roads across private land (where there are willing landowners).

f. Forge cooperative efforts among the federal agencies and state and local governments (e.g., the Front Country Initiative in Colorado) to identify and manage sites that meet the needs of recreational shooters and hunters.

g. Support states' efforts to establish and expand access programs (as an alternative to land leasing) like "open fields" that offer incentives for private landowners to provide access to hunters. Landowner appreciation and/or cooperative signage initiatives could be developed.

h. Forge cooperative efforts among agencies to encourage willing landowners enrolling in federal- or state-funded habitat conservation and cost-share programs to allow access to youth/mentor hunters.

3. Identify currently "land-locked" federal lands or lands with inadequate access and prioritize those lands according to the amount of sportsmen-related recreational opportunities that are likely to be gained with access. Actions include the following:

   a. Work with the Administration and Congress to elevate funding under the Land and Water Conservation Act and other authorities (e.g., Challenge Cost Share, Transportation Bill) for access acquisition.

   b. Identify other possible opportunities to gain or improve access such as willing seller land exchanges and easement acquisition or donation across private land, as well as participation by third-party private, corporate, or nonprofit organizations to partner in access opportunity development.

   c. Develop criteria consistent with landscape planning to govern the sale and purchase of land-locked federal land (Sell a Square-Buy a Square).

   d. Establish a separate account that would hold the sale proceeds to be used to purchase new public land according to a landscape plan.

4. Work with the states, federal agencies, and the shooting sports community to develop a comprehensive analysis of recreational shooting needs. Actions include the following:

   a. Conduct local use surveys and identify range development tactics and designs to meet recreational shooter and hunter needs.

   b. Determine how the concerns over liability related to recreational activities and hazardous materials is impacting recreational shooting on federal lands.

Challenges

1. Establishing an integrated mapping Web site, improving signage, and providing other important information to hunters and recreational shooters takes money and staff. The

current process for acquiring funds for signage is cumbersome and is unlikely to achieve the desired goals.

2. Opening access to blocked federal lands takes money and willing private landowners.
3. Hunter participation on federal lands could be affected by restricting off-highway vehicle use to designated routes for game retrieval.
4. Providing access to recreational shooting can be dependent on funding, staff, and private or state/local government management partnerships.
5. Federal policies can affect recreational shooting access and opportunities. The FS and BLM do not designate areas for shooting because of liability and hazardous materials concerns. The BLM cannot pursue land leases for shooting ranges under the Recreation and Public Purposes Act due to concerns related to hazardous materials and resource cleanup liability. The BoR requires sportsmen's clubs to post significant bonds for future cleanup of ranges.
6. Opening public access to and through private land is constrained by the cost of the incentives, the economic return in leasing private lands, and concerns over liability.
7. Funding for state hunter access programs is not sufficient to meet current and future demand for places to hunt, although there does not appear to be a shortage of private landowners who are willing to enroll or lease their lands for such programs.
8. Proposals for new and expanded hunting on federal lands are weighed down by perceived administrative costs.

Consequences of Inaction

1. Lack of awareness of what lands are open for hunting and recreational shooting will continue to exact a toll on hunter participation similar to the limitations on physical access.
2. Urbanization of the West and lack of funding and proactive management of recreational shooting will continue to result in federal lands being closed to recreational shooting.
3. Reduction in access for hunting will result in lost revenue to state wildlife agencies through excise taxes, license fees, habitat stamps, and game tags, as well as diminish the state agencies' use of hunting to manage for desired population levels. These reductions also lead to losses to local and state economies.
4. Continued closure of private lands to public hunting increases the burden on public lands to provide hunting opportunities, which can lead to overcrowding, safety issues, and a reduction in quality of the hunting experience.
5. Not having access to places to shoot can have a significant impact on recruiting and retaining hunters and teaching safe, ethical, and responsible shooting.
6. Closure of federal and state lands to recreational shooting increases the burden on each to provide for these opportunities, with shooters and hunters becoming the losers in the process.
7. Professional wildlife management programs and initiatives that rely on hunter participation will be unable to achieve wildlife population objectives.

Opportunities

1. Create a Hunting and Shooting Sports Foundation similar to the Recreational Boating and Fishing Foundation.
2. Expand and develop partnerships with the U.S. Department of the Interior, Department of Agriculture, DOD, DOE, FWS, BLM, BoR, NPS, and FS to determine what lands could be accessed by hunters and recreational shooters.
3. Examine the potential for shooting ranges and hunting opportunities as part of the military Base Realignment and Closure process.
4. Expand federal funding or tax incentives to provide access to private land (i.e., the "hunter walk-in" programs and the "open fields" program in the Farm Bill).
5. Partner with the technology industry to design and implement user-friendly access databases and Web sites.
6. Develop federal policy to creatively acquire access and maintain and improve existing roads and trails. For example, in the Transportation Bill, create an "open roads" program to provide funding to improve access to isolated parcels of federal lands. In addition, enhancement and maintenance funds should be provided to federal agencies and states for roads and trails.
7. In federal agencies, incorporate evaluation of the effects on hunting and recreational shooting as part of their National Environmental Policy Act analyses for land use plans and subsequent management actions.
8. Fund or implement the results of the data call for proposals that would improve federal land access, an initiative under the umbrella of the Federal Lands Hunting, Fishing, and Shooting Sports Roundtable Memorandum of Understanding (U.S. Forest Service 2006).
9. In federal agencies, evaluate and assess the public safety risks and risk liability associated with shooting and hunting, commensurate and consistent with other public land recreational activities.
10. In federal agencies, base decisions relative to the environmental liability of recreational shooting on the Environmental Protection Agency's policy, management guidance, and regulatory positions on spent lead ammunition.
11. Develop an effective governmentwide process to facilitate the use of nonfederal funds for acquiring access.

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Conclusion

Throughout American history, citizens have had a major impact on our nation's policies, whether it be through their elected officials, at the ballot box, in local community meetings, or in school board meetings. Local, state, and federal governments recognize the powerful benefits of an active public participation process. This democracy of action, of citizen-driven policy recommendations, is the hallmark of our country. During the past 100 years, this approach has developed the most successful wildlife conservation model in the world. Just as the key efforts of Roosevelt, Leopold, and Allen addressed the wildlife challenges of their times, we offer our view of the current challenges that confront wildlife management. The white papers included in this volume are an example of just such a citizen-driven approach to meet the current and future challenges that confront our wildlife resources and our nation's hunting heritage.

The recommendations presented are the result of more than 12 months of thoughtful dialogue and development. They are the result of citizen-stewards, conservationists from all over the nation. They represent bipartisan contributions from nongovernmental organizations, state fish and wildlife agencies, academia, federal land management agencies, tribal governments, and private individuals. They provide sound policy direction based on the collective input of dozens of wildlife professionals with a combined experience of hundreds of years. These professionals have worked in the nation's halls of Congress and in the nation's fields and forests. They have dedicated their careers and lives to enhancing wildlife and habitat for current and future generations.

Given the current suite of issues confronting our nation—the economy, energy demands, terrorism, health care, and education—it might be easy to ignore the wildlife resources that bless our country. However, during another difficult time in our nation's history, the 1930s, our citizens and leaders passed federal legislation to ensure that future generations would experience abundant and diverse wildlife. During that time, Aldo Leopold wrote the first textbook on wildlife management, entitled Game Management. While the nation was in the grip of the Great Depression and Hitler was about to march into Poland to start World War II, the Wildlife Restoration Act of 1937 was passed by Congress. This Act, supported by hunters and the hunting industry, provided a permanent source of federal funding to state fish and wildlife agencies. The foresight of those political leaders, during one of the most difficult times in our nation's and the world's history, is evident in the abundant waterfowl that soar our skies, the deer and elk that grace our meadows, the bighorn sheep that command our jagged peaks, the wild turkeys that strut in our forests, and the predators that prowl these habitats. We as a nation are richer for their leadership.

The issues that wildlife management currently faces—funding, coordination, energy development, climate change, habitat conservation, hunting heritage, and the very principles on which we manage wildlife in trust for the public—are daunting. Each comes with a set of challenges and opportunities for the future. Building on the insight and ingenuity of those who developed the 1930 American Game Policy and the 1973 North American Wildlife Policy, we have developed a blueprint to reinforce the foundation of wildlife management and to construct new programs and approaches that address the issues confronting not just wildlife but our citizens.

These white papers are presented to current and future administrators, legislators, practitioners, and our nation's citizens concerned about sustaining our nation's rich wildlife legacy. This work is our gift and our challenge to the decision makers of today, but more importantly, to the generations yet to come.

Appendices

Appendix 1. U.S. Department of the Interior Press Release of March 23, 2006: Creation of the SCC

NEWS

U.S. Department of the Interior

For Immediate Release
March 23, 2006

Contact: Hugh Vickery
(202)208-6416

Norton Names 12 To New Sporting Conservation Council; Will Advise Interior On Hunting, Wildlife Resource Issues

(COLUMBUS, Ohio) -- Interior Secretary Gale A. Norton today announced the creation of a new Sporting Conservation Council that will advise the Department of the Interior on resource conservation issues of interest to the hunting community. Norton also named the initial members who will represent various parts of the community.

The council will provide important input in the areas of habitat restoration and protection; the impact of energy development on wildlife resources; forest and rangeland health; hunting access to federal lands; and other issues in which the sporting and conservation community can provide a valuable perspective to resource managers and senior leaders throughout the department.

Norton made the announcement at the annual North American Wildlife and Natural Resources Conference in Columbus. “Dating back to Teddy Roosevelt, hunters have been the pillar of conservation in America, doing more than anyone to conserve wildlife and its habitat,” Norton said. “This new advisory council will provide a formal mechanism for the department to benefit from the expertise of sportsmen and -women as well as become aware of their concerns as we develop federal policies.”

Norton noted that sportsmen and -women have contributed billions of dollars in license fees, excise taxes and conservation stamp revenues to finance federal and state wildlife conservation efforts, including the expansion of the National Wildlife Refuge System.

“Many hunters also volunteer countless hours for conservation causes and raise additional money for habitat improvements and acquisitions across the country,” she said. “The creation of this council recognizes their vital contribution to our nation’s conservation ethic. It is a way of institutionalizing the role of sportsmen and -women in advising the decision-making process at Interior.”

The panel, whose members will serve two-year terms without compensation, is to meet at least twice a year. Members may recommend policies or programs designed to maintain

or restore wetlands, forest and rangeland habitats, as well as policies or programs that promote access to hunting and recreation on federal lands.

The council will also advise the Interior Secretary about wildlife conservation endeavors that benefit hunting and wildlife resources and that encourage partnerships among members of the public, the sportsmen-conservation community, wildlife conservation groups and state and federal governments.

Norton said that a careful appraisal determined that no other entities exist that adequately represent the views of the hunting and conservation communities, and she therefore deemed it worthwhile to create the council under the provisions of the Federal Advisory Committee Act (FACA).

Support services for the activities of the council will be provided by the U.S. Fish and Wildlife Service and the Bureau of Land Management.

Council members appointed by Norton include:

- Robert Model, chairman, Boone and Crockett Club of America, representing big game hunting;
- Steve Mealey, former forest supervisor and member, Boone and Crockett Club of America, representing the hunting community;
- Rob Keck, Chief Executive Officer, National Wild Turkey Federation, representing game bird hunting organizations;
- John Baughman, Executive Director, International Association of Fish and wildlife Agencies, representing state fish and wildlife agencies;
- Jeff Crane, president, Congressional Sportsmen's Foundation, representing wildlife conservation organizations;
- Merle Shepard, Vice President, Safari Club International, representing big game hunting organizations
- Jim Mosher, Executive Director, North American Grouse Partnership, representing game bird organizations;
- Peter J. Dart, president and Chief Executive Officer, Rocky Mountain Elk Foundation, representing big game hunting organizations;
- Susan Recce, director, Conservation, Wildlife and Natural Resources, National Rifle Association, representing wildlife conservation organizations, and
- Christine Thomas, Dean and Professor of Resources Management, University of Wisconsin-Stevens point College of Natural Resources, representing the hunting community;
- Daniel R. Dessecker, senior wildlife biologist, Ruffed Grouse society, representing game bird organizations; and
- John Tomke, Chairman of the Board of Ducks, Unlimited, Inc., representing game bird hunting organizations.

Appendix 2. Executive Order 13443 of August 16, 2007: Facilitation of Hunting Heritage and Wildlife Conservation

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Purpose. The purpose of this order is to direct Federal agencies that have programs and activities that have a measurable effect on public land management, outdoor recreation, and wildlife management, including the Department of the Interior and the Department of Agriculture, to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.

Section 2. Federal Activities. Federal agencies shall, consistent with agency missions:

(a) Evaluate the effect of agency actions on trends in hunting participation and, where appropriate to address declining trends, implement actions that expand and enhance hunting opportunities for the public;

(b) Consider the economic and recreational values of hunting in agency actions, as appropriate;

(c) Manage wildlife and wildlife habitats on public lands in a manner that expands and enhances hunting opportunities, including through the use of hunting in wildlife management planning;

(d) Work collaboratively with State governments to manage and conserve game species and their habitats in a manner that respects private property rights and State management authority over wildlife resources;

(e) Establish short and long term goals, in cooperation with State and tribal governments, and consistent with agency missions, to foster healthy and productive populations of game species and appropriate opportunities for the public to hunt those species;

(f) Ensure that agency plans and actions consider programs and recommendations of comprehensive planning efforts such as State Wildlife Action Plans, the North American Waterfowl Management Plan, and other range-wide management plans for big game and upland game birds;

(g) Seek the advice of State and tribal fish and wildlife agencies, and, as appropriate, consult with the Sporting Conservation Council and other organizations, with respect to the foregoing Federal activities.

Section 3. North American Wildlife Policy Conference. The Chairman of the Council on Environmental Quality (Chairman) shall, in coordination with the appropriate Federal agencies and in consultation with the Sporting Conservation Council and in cooperation with State and tribal fish and wildlife agencies and the public, convene not later than 1 year after the date of this order, and periodically thereafter at such times as the Chairman deems appropriate, a White House Conference on North American Wildlife Policy (Conference) to facilitate the exchange of information and advice relating to the means for achieving the goals of this order.

Section 4. Recreational Hunting and Wildlife Resource Conservation Plan. The Chairman shall prepare, consistent with applicable law and subject to the availability of appropriations, in coordination with the appropriate Federal agencies and in consultation with the Sporting Conservation Council, and in cooperation with State and tribal fish and wildlife agencies, not later than 1 year following the conclusion of the Conference, a comprehensive Recreational Hunting and

Wildlife Conservation Plan that incorporates existing and ongoing activities and sets forth a 10 year agenda for fulfilling the actions identified in section 2 of this order.

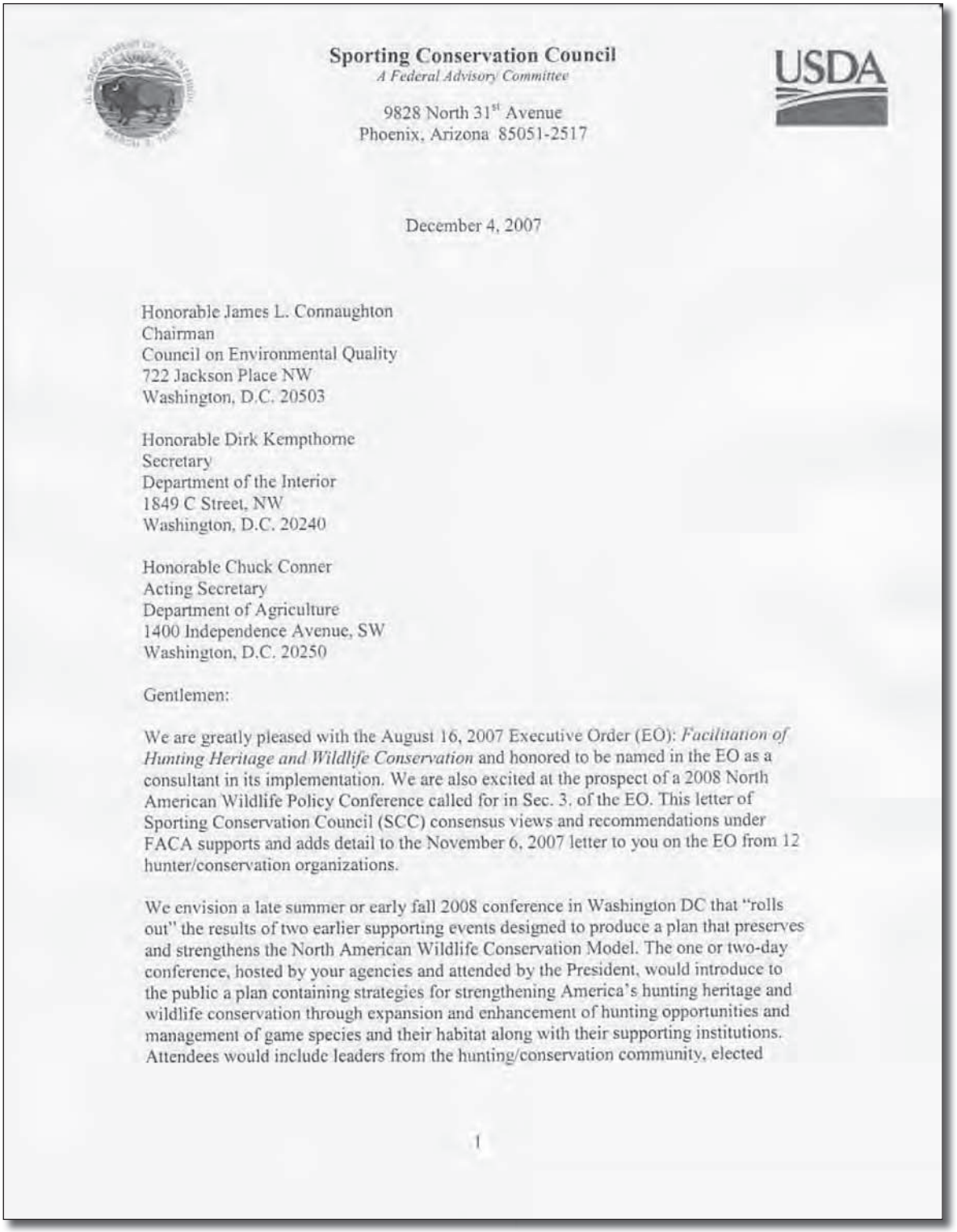
Section 5. Judicial Review. This order is not intended to, and does not, create any right, benefit, trust responsibility, or privilege, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, instrumentalities, or entities, its officers or employees, or any other person.

GEORGE W. BUSH

THE WHITE HOUSE,

August 16, 2007.

Appendix 3. Final SCC White House Conference Recommendations



Sporting Conservation Council
A Federal Advisory Committee

9828 North 31st Avenue
Phoenix, Arizona 85051-2517

USDA

December 4, 2007

Honorable James L. Connaughton
Chairman
Council on Environmental Quality
722 Jackson Place NW
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Honorable Dirk Kempthorne
Secretary
Department of the Interior
1849 C Street, NW
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Honorable Chuck Conner
Acting Secretary
Department of Agriculture
1400 Independence Avenue, SW
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Gentlemen:

We are greatly pleased with the August 16, 2007 Executive Order (EO): *Facilitation of Hunting Heritage and Wildlife Conservation* and honored to be named in the EO as a consultant in its implementation. We are also excited at the prospect of a 2008 North American Wildlife Policy Conference called for in Sec. 3. of the EO. This letter of Sporting Conservation Council (SCC) consensus views and recommendations under FACA supports and adds detail to the November 6, 2007 letter to you on the EO from 12 hunter/conservation organizations.

We envision a late summer or early fall 2008 conference in Washington DC that "rolls out" the results of two earlier supporting events designed to produce a plan that preserves and strengthens the North American Wildlife Conservation Model. The one or two-day conference, hosted by your agencies and attended by the President, would introduce to the public a plan containing strategies for strengthening America's hunting heritage and wildlife conservation through expansion and enhancement of hunting opportunities and management of game species and their habitat along with their supporting institutions. Attendees would include leaders from the hunting/conservation community, elected

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officials from all levels of state, federal and tribal government and leaders from state, federal and tribal agencies involved with wildlife and wildlife habitat management.

The earlier supporting events would include a technical, fact finding, issue/option development workshop, and a general policy development, option prioritization/selection workshop.

Technical Workshop:
Panels of specially selected technical experts from federal, state, tribal and private agencies would develop issue/resolution option "white papers" on the following topics introduced in the November 6, 2007 letter essential to preserving the North American Wildlife Conservation Model: (see enclosure)

1. North American Wildlife Conservation Model
   - Benefits
   - Public Understanding
   - Public Trust Doctrine
2. State/Federal/Tribal Wildlife Management
   - Collaboration
   - Cooperation: Wildlife Population Objectives
3. Habitat Conservation and Management
   - Public Land Habitat Restoration and Management
   - Incentives for Private Land Wildlife Conservation
   - Energy Development/Wildlife Coordination
   - Climate Change/Wildlife Effects
4. Funding For Wildlife Conservation
   - State Agency Funding Enhancement
   - Federal Agency Funding Enhancement
   - Markets for Conservation Credits
5. Perpetuating Hunter Traditions
   - Access to Public and Private Land
   - Hunter Recruitment and Retention
   - Education (Youth and Conservation Leadership)

Experts from American Wildlife Conservation Partners (AWCP) organizations, selected other entities with appropriate expertise, and Federal land management and regulatory agencies, (many of whom have already done considerable work on the listed issues) would come together soon in an appropriate location (we suggest April 8-10, 2008, in Denver, CO) to work intensely for a relatively short time to complete issue/resolution option papers. We recommend you assign counterpart Federal representatives from your respective departments and agencies to work with SCC topic leaders in this process. The white papers would be published in a "Technical Workshop" report.

Policy Workshop:
Federal, state, tribal and private wildlife agency and hunter/conservation organization decision makers would select a priority list of actions or response options that can effectively resolve issues published in the Technical Workshop proceedings. "Policy

Workshop" participants would be leaders from CEQ, USFWS, USFS, BLM, NRCS, Tribal governments, all 50 state wildlife agencies, AWCP partners, SCC, and selected other entities. Leaders would come together soon after publication of the Technical Workshop proceedings for a two or three-day session to hear presentations from Technical Workshop topic leaders and select a priority list of cohesive actions that together constitute a plan that effectively resolves issues and preserves and strengthens the North American Model. The plan and supporting selected actions would be published in a "Policy Workshop" conference report.

We recommend the following as "guiding principles" for the conference and two supporting events:

1. Bipartisanship should prevail in overall approach including topics and participants.
2. The principal focus should be on preserving and strengthening the North American Wildlife Conservation Model.
3. The conference and supporting events should be "working" events designed to achieve measurable outcomes to preserve and strengthen the North American Model.
4. The conference and supporting events should take place in an atmosphere of collaboration and collegiality.
5. Principal funding should come from federal agencies.

We deeply appreciate the excellent work on the EO and progress to date in its implementation by Melissa Simpson, Mitch Butler, Greg Schildwachter, and Jim Mosher. We look forward to meeting with them in the next week or so to detail the conference and supporting events following the approach in this and in the November 6, 2007 letter. This will set in motion the work necessary to carry out another great wildlife policy conference; one in the excellent tradition of the 1908 Conference of Governors, the 1930 American Game Policy Conference and the 1973 North American Wildlife Policy Conference.

Sincerely,

Bob Model
Chair

Enclosure: Topic Summaries

CC: Mark Rey, USDA Under Secretary for Natural Resources and Environment
Lyle Laverty, USDOI Assistant Secretary for Fish, Wildlife and Parks
C. Stephen Allred, USDOI Assistant Secretary for Land and Minerals Management
Carl J. Artman, USDOI Assistant Secretary for Indian Affairs
Kameran Onley, USDOI Acting Assistant Secretary for Water and Science
Greg Schildwachter, CEQ Associate Director for Agriculture, Lands and Wildlife

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Driver # 1 from 6 November letter:

NORTH AMERICAN WILDLIFE CONSERVATION MODEL

"One reason the North American Model of wildlife conservation has been hailed as the greatest model of conservation is that it rests on a bedrock philosophy: wildlife is a public resource, one that is held in trust. Today, however, what became to be known as the Public Trust Doctrine, and with it the North American model of wildlife conservation, are under siege. Increasing privatization of wildlife, a boom in the establishment of game farms raising wildlife for sale, the animal rights movement and other trends are continually eroding the underpinnings of the Public Trust Doctrine. These developments threaten the legal mechanism that allow for the protection and conservation of wildlife as a public resource. To protect the Public Trust Doctrine, conservation practitioners must consciously revisit its foundations so they can better understand its benefits, as well as the risks that citizens face if wildlife is not robustly protected by public ownership and government trust." **

** John Organ and Shane Mahoney; The Future of Public Trust, Wildlife Professional, Summer 2007, Vol. 1, No. 2

Driver # 2 from 6 November letter:

STATE/FEDERAL/TRIBAL WILDLIFE MANAGEMENT

Efforts by conservationists at the turn of the 19th century paved the way for state laws vesting authority in state agencies to manage fish and resident wildlife on all lands within state boundaries. Compacts between tribal and state and/or federal governments have been developed to reaffirm treaty-based tribal interests and authorities where appropriate. Concurrent state-tribal-federal jurisdiction has been established where necessary to satisfy the purpose of the Endangered Species Act or other federal legislation. Wildlife conservation is enhanced when state, tribal and federal agencies can collaborate as full partners consistent with existing statutory and treaty obligations. As an example, the availability and the health of rangeland, grassland, wetland and forest habitats on federal public lands can significantly affect the ability of state fish and wildlife agencies to attain/sustain game wildlife population goals and, thereby, meet hunter expectations.

Driver # 3 from 6 November letter:

HABITAT CONSERVATION AND MANAGEMENT

Habitat restoration and management activities on federal lands should aid in meeting state agency wildlife habitat and population goals. However, in some regions of the country, the vast majority of the available wildlife habitats are is held in private ownership. Incentives to protect and enhance habitats for wildlife on private lands include the ability to secure conservation easements and development rights for properties with exceptional value to wildlife, tax policies that reflect the value to society of lands dedicated to habitat conservation and mitigation credits, among others. Such incentives are most helpful when protecting wild lands from residential or commercial development while encouraging continued habitat management on the tract in question.

Driver # 4 from 6 November letter:

FUNDING

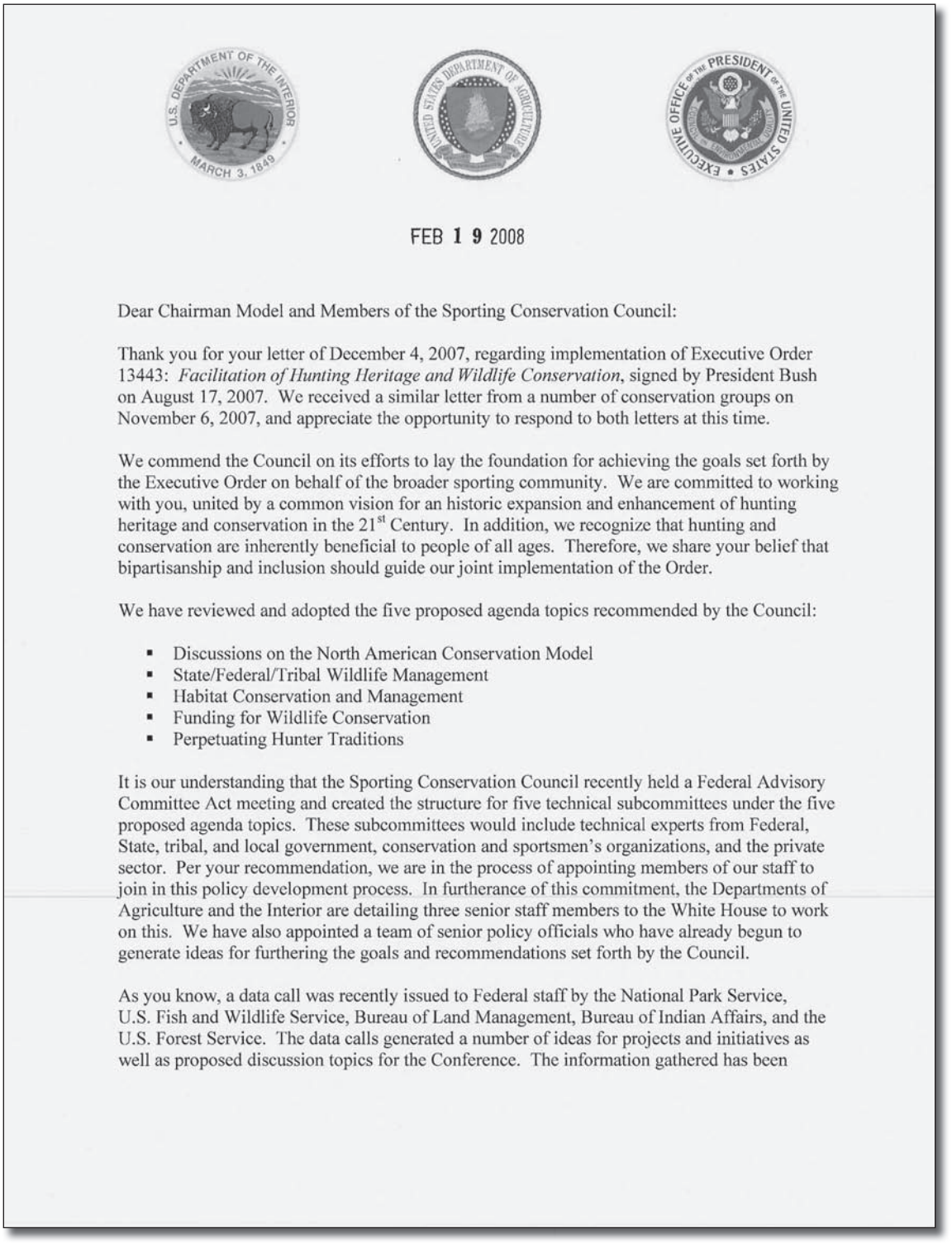
In recent years there has been increasing pressure for state agencies to take on a greater role in conserving all wildlife species, particularly those that are imperiled or at risk of becoming so. Recent Congressional efforts to secure assured funding raised the profile of this demonstrated financial need and resulted in annual appropriations through State Wildlife Grants. However, only assured funding can provide the certainty, consistency and longevity to carry out successful programs to allow state fish and wildlife agencies to conserve imperiled wildlife and to keep common species common.

Driver # 5 from 6 November letter:

PERPETUATING HUNTER TRADITIONS

Hunting and the recreational shooting of firearms and archery equipment are important elements of America's outdoor heritage. Throughout much of the nation, opportunities to engage in these activities are dependent upon access to federal public lands - opportunities that are increasingly important as access to private lands for these activities are increasingly constrained. Participation in these activities on federal lands could be enhanced by better identification of existing access and the establishment of access for large blocks of currently inaccessible federal lands. In addition, although studies document that a majority of the non-hunting public approves of hunting, coordinated efforts to enhance public understanding of the role of hunting in wildlife conservation could expand this approval and enhance hunting opportunities on private lands.

Appendix 4. CEQ and USDA-DOI Response to Final SCC White House Conference Recommendations



FEB 19 2008

Dear Chairman Model and Members of the Sporting Conservation Council:

Thank you for your letter of December 4, 2007, regarding implementation of Executive Order 13443: *Facilitation of Hunting Heritage and Wildlife Conservation*, signed by President Bush on August 17, 2007. We received a similar letter from a number of conservation groups on November 6, 2007, and appreciate the opportunity to respond to both letters at this time.

We commend the Council on its efforts to lay the foundation for achieving the goals set forth by the Executive Order on behalf of the broader sporting community. We are committed to working with you, united by a common vision for an historic expansion and enhancement of hunting heritage and conservation in the 21st Century. In addition, we recognize that hunting and conservation are inherently beneficial to people of all ages. Therefore, we share your belief that bipartisanship and inclusion should guide our joint implementation of the Order.

We have reviewed and adopted the five proposed agenda topics recommended by the Council:

- Discussions on the North American Conservation Model
- State/Federal/Tribal Wildlife Management
- Habitat Conservation and Management
- Funding for Wildlife Conservation
- Perpetuating Hunter Traditions

It is our understanding that the Sporting Conservation Council recently held a Federal Advisory Committee Act meeting and created the structure for five technical subcommittees under the five proposed agenda topics. These subcommittees would include technical experts from Federal, State, tribal, and local government, conservation and sportsmen's organizations, and the private sector. Per your recommendation, we are in the process of appointing members of our staff to join in this policy development process. In furtherance of this commitment, the Departments of Agriculture and the Interior are detailing three senior staff members to the White House to work on this. We have also appointed a team of senior policy officials who have already begun to generate ideas for furthering the goals and recommendations set forth by the Council.

As you know, a data call was recently issued to Federal staff by the National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management, Bureau of Indian Affairs, and the U.S. Forest Service. The data calls generated a number of ideas for projects and initiatives as well as proposed discussion topics for the Conference. The information gathered has been

synthesized and will soon be transmitted to the SCC and administration officials who will work cooperatively to develop near term deliverables for implementation of the Order, as well as information and ideas that will inform planning for the Conference.

We are also in agreement with the proposal to have technical and policy workshops prior to the conference. While exact dates and venues are not yet finalized, the framework outlined below represents our work to date to implement this recommendation:

Technical Workshop (Spring, 2008)

Subcommittees of the Sporting Conservation Council would meet to develop issue/resolution "white papers" on the five technical areas. Teams from each topic area would work to prepare their presentations for the Policy Workshop.

Policy Workshop (Summer, 2008)

Champions in the hunting and conservation fields would convene to hear presentations from the Technical workshops and work collaboratively to expand the technical "white papers" into a full report to the President. The report would set forth the policies, initiatives, and projects recommended for implementation of the Order in the next decade and beyond.

Early Fall, 2008, Washington, DC

Senior Administration officials would host members of congress, representatives of State, tribal and local government, and champions of the sporting community for the *White House Conference on North American Wildlife Policy.* Participants of the conference would discuss the report recommendations and develop the shared vision and commitments needed to ensure success going forward.

We appreciate the work that the SCC and the hunter/conservation community has put toward the implementing the E.O. and the concepts for the Conference. We look forward to working with all of you on this historic endeavor.

Sincerely,

Dirk Kempthorne
Secretary
Department of the Interior

Ed Schafer
Secretary
Department of Agriculture

James L. Connaughton
Chairman
White House Council on
Environmental Quality

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Appendix 5. Important Federal Wildlife Resource Laws That Authorize or Require Federal, State, and Tribal Coordination

The Bald and Golden Eagle Protection Act

The Clean Water Act

The Convention on International Trade in Endangered Species of Wild Fauna and Flora

The Dingell-Johnson Federal Aid in Sport Fish Restoration Act

The Endangered Species Act

The Federal Land Policy and Management Act

The Federal Lands Recreational Enhancement Act

The Fish and Wildlife Conservation Act

The Fish and Wildlife Coordination Act

The Lacey Act

The Migratory Bird Treaty Act

The National Environmental Policy Act

The National Forest Management Act

The National Historic Preservation Act

The National Wildlife Refuge System Improvement Act

The North American Wetlands Conservation Act

The Pittman-Robertson Federal Aid in Wildlife Restoration Act

The Rivers and Harbors Act

The Sikes Act

The Wild and Scenic Rivers Act

The Wild Bird Conservation Act

The Wilderness Act

Appendix 6. Seven Principles of the North American Model of Wildlife Conservation (Geist 2006)

The Public Trust: In North America, natural resources on public lands are managed by government agencies to ensure that we always have wildlife and wild places to enjoy.

Prohibition on Commerce of Dead Wildlife: Conservation laws and their strong enforcement in the United States and Canada saved wildlife from slaughter.

Democratic Rule of Law: You can help make laws to regulate hunting and fishing and conserve wildlife.

Hunting Opportunity for All: Every citizen has an opportunity, under the law, to hunt and fish in the United States and Canada.

Non-Frivolous Use: In North America, we can legally kill certain wild animals under strict guidelines for food and fur, self-defense, and property protection.

International Resources: Wildlife and fish migrate freely across boundaries between states, provinces, and countries.

Scientific Management: The right information helps us make good decisions and become better stewards of wildlife.

Appendix 7. New Science and Changing Habitats Should Motivate Paradigm Shifts in Habitat Assessment and Planning Processes: A Case Study of Big Game in Forest Landscapes

Overview

In the twentieth century, the habitats of the American West were initially dominated by early-succession vegetations that had been created and maintained by frequent and large-scale fires. Against this backdrop, traditional management for big game emphasized habitat protection and control of mortality from predators and humans. It was assumed that forage resources did not generally limit big game populations and that by merely maintaining vegetative diversity within the seasonal ranges of big game populations, other species with more narrow habitat requirements would be maintained as well. However, fire suppression following World War II and recent emphasis on preservation of late-succession forests have greatly reduced regeneration and abundance of early-succession habitats. The reduction of these habitats has had negative consequences for big game populations, particularly in areas where forests dominate the landscape. State and federal agencies are now challenged to reconcile (historical) objectives for big game populations with objectives for managed landscape disturbance and with conservation of late-succession habitats for other species. Preserving America's hunting heritage in the West will require a more holistic approach to landscape assessment and planning, in which new science will be crucial to integrating the disturbance regimes of natural and managed agents to meet specific, strategic goals for big game populations.

Changing Disturbance Regimes and Altered Habitats

For millennia, large-scale fire episodes were a frequent occurrence in the West, shaping the region's habitat mosaics and defining the production potential of its big game populations. Large-scale fire episodes occurred in the Interior Columbia River Basin, for example, at roughly 12-year intervals (Barrett et al. 1997) and were also common in ecosystems west of the Cascade Mountains (Zybach 2003). Across the greater region, cycles of episodic fire were sustained and reinforced by interactions between the region's cyclic climate; seasonal convective storms; and, for at least the last 10,000 years, by aboriginal burning (Zybach 2003, Kay 2007). Between 1870 and 1940, for example, an area equivalent to 53% of the entire Nez Perce National Forest was burned during only four of these regional fire episodes (1889, 1910, 1919, and 1934; Nez Perce National Forest 2008). Similarly large-scale episodic events ensured that vast areas of the region's landscapes were dominated by early-succession, post-fire vegetations prior to World War II.

In stark contrast, the scale of timber harvest has seldom approached the scale of historic fire on most public lands. On the Nez Perce National Forest, for example, the percentage of land area modified through timber harvest has never exceeded 0.5% annually. Under such circumstances of low managed disturbance, post–World War II fire suppression effectively suppressed the former role of episodic disturbance in shaping habitats. Early-succession vegetations have not been maintained or regenerated at historical rates, and their prevalence in forest landscapes has declined over time (Quigley et al. 1996). Recent federal policies aimed at reducing timber harvests have reinforced this decline, albeit to varying extent from one locale to another.

In the West's forest landscapes, abundant forage of superior nutritive value typically is found in the early-succession habitats (Riggs et al. 1996), but these habitats usually persist for only 10–40

years after disturbance by fire or logging. As succession advances beyond these early stages, forage quantity often declines by an order of magnitude or more, and plant composition shifts toward plant species that are not nutritious and/or not palatable. Thus, as disturbance and the resulting amount of early-succession vegetations decline, the nutritional status, reproduction and survival, and sizes of dependent big game herds can be expected to decline as well (Peek et al. 2001, 2002, Hett et al. 1978, Jenkins and Starkey 1996, Gill et al. 1996).

Declining Populations of Big Game

Following protection of game populations from overhunting early in the twentieth century, populations of big game grew dramatically in those landscapes that were dominated by early-succession vegetations. As these early successions have declined, however, game populations have declined despite strict regulation of hunting harvests. First indications of forage limitations were published for elk in the early 1950s (Buechner and Swanson 1955). Palpable declines in the reproductive vigor of specific deer and elk populations followed in the 1960s and 1970s and have since become more evident in the 1980s and 1990s (Johnson et al. 2004). State archives reveal that, in eastern Oregon and adjacent Idaho, for example, calf ratios for elk populations have declined to below 30 calves per 100 cows in fully one third of populations—a level of productivity that can only support marginal sport harvest. Idaho's famous Lochsa elk population has undergone at least three reductions since the 1940s. In western Washington, elk populations have declined by as much as 50% in some areas since the late 1980s. The famous Interstate mule deer herd, along the California-Oregon border, has declined by 90% (Peek et al. 2001, 2002).

Such declines of major big game populations present several problems. States must accept losses in hunter opportunity, reduced revenue streams, and losses of economic contributions from hunters to rural economies. As nutritionally stressed game populations intensify their grazing on remaining early-succession habitats, state and federal agencies both must deal with habitat degradation from overgrazing and increased damage to crops on adjacent private lands.

Implications of New Science

In the West, habitat management for big game traditionally emphasized protection of winter ranges, whereas forage limitations on other seasonal ranges were assumed to not be important. But recent research has established that the production potential of most big game populations is regulated by forage resources on summer and fall ranges—where birthing, growth, replenishing of fat reserves, and breeding occur (Cook 2002, Cook et al. 2004, Hobbs 1989, Hobbs and Swift 1985, Merrill and Boyce 1991, Cook et al. 2001b). In fact, habitat's greatest contribution to the productivity of big game herds likely is a function of the nutritional adequacy of summer and fall ranges. In the Pacific Northwest, these seasonal ranges occur predominantly in forest zones that are managed by federal agencies. Thus, sustaining a viable heritage of big game hunting depends on enabling these agencies to maintain adequate forage bases, by maintaining adequate amounts of early-succession vegetations through appropriate management of landscape disturbance. This will require that state and federal agencies more explicitly reconcile their objectives for game production with their objectives for vegetation management and with their objectives for nongame wildlife. It will also require a more strategic (i.e., long-term) focus for landscape planning.

To succeed in this endeavor, federal agencies must be able to develop habitat assessment procedures and strategic management plans that recognize linkages among landscape disturbance regimes, nutritional adequacy of habitats, and the nutritional status and productivity of wildlife populations. Furthermore, regional climate change is likely to modify the disturbance ecology of

the West's landscapes (Bachelet et al. 2003), and thus federal strategic plans must be able to foresee the implications that climate change will have for managing other disturbance agents (e.g., fire, silviculture, grazing) and for developing and meeting appropriate goals for big game populations.

Challenges

Current monitoring of game populations and their habitat by agencies is not sufficient to establish linkage between early successions and the production dynamics of wildlife populations. While research has clarified the mechanisms through which landscape forage dynamics limit wildlife populations, managers rarely know the nutritional status of their own wildlife populations or understand the nutritional dynamics of game ranges that they manage. This lack of professional understanding impedes effective agency response to changing habitat conditions.

Traditional habitat assessment models, such as habitat effectiveness (HE) and habitat suitability indices (HSI) dominate in federal habitat assessments (Lyon and Christensen 1992, Ministry of Environment 1999, Rumble et al. 2007). However, these models have not been updated to reflect best available science regarding the successional or nutritional dynamics of western game ranges. Current forms of HE and HSI models are categorically incapable of assessing game ranges in terms that reconcile nutritional adequacy of forage on seasonal ranges with the nutritional requirements of particular wildlife populations.

Managing landscapes on behalf of wildlife populations necessitates long-range strategic planning, because interactions between wildlife populations, landscape disturbance cycles, and the succession of vegetations are normally played out over periods of several decades. Strategic landscape models nevertheless remain unreasonably simplistic. Dynamic landscape fire succession models (LFSMs; Keane et al. 2004), for example, are emerging as dominant platforms for multidisciplinary planning. However, these models remain insensitive to some disturbance agents, such as multi-species grazing regimes which, in interaction with other agents (forestry, fire, climate), are known to influence forest succession, landscape fuel dynamics, and ultimately fire regimes. Thus, there is a substantial gap between what forest and game range ecologists know and what federal landscape planners are able to illustrate to stakeholders. Such technological gaps compromise the rigor and clarity of strategic planning, impede public understanding of complex habitat dynamics, and decrease the likelihood of broad support for appropriate vegetation management programs.

Habitat assessments and strategic landscape planning often are not executed by federal agencies at spatial or temporal scales that are demonstrably relevant to landscape disturbance cycles or to wildlife population dynamics. Consequently, many assessments and plans have had difficulty evaluating the strategic relevance of managed disturbance (in the short term) to sustaining wildlife populations over the long term. Assessments and planning exercises that are conducted at ecologically unrealistic scales (i.e., too small of spatial scale or too short of time span) retard understanding of "relative risks" that involve trade-offs between long-term management benefits and short-term management risks.

Opportunities

Recent research provides a sound nutritional basis for predicting the reproductive potential of big game populations (Cook et al. 2004, Parker et al. 1999, Moen et al. 1997, Ager et al. 2005, Cook et al. 2001b, Cook et al. in preparation, Cook et al. 2001a). Federal agencies could usefully cooperate with state agencies and interested nongovernmental organizations to benchmark and periodically assess nutritional status and the reproductive performance of populations on federal lands. When

specific benchmarks are not met, then area-specific problem analyses could be incorporated into federal planning processes to reconcile state population objectives with federal land objectives and to identify management solutions.

Recent research provides federal agencies with a sound basis for revising habitat assessment procedures for big game (e.g., HE and HSI; Cook et al. 2004, Ager et al. 2005, Cook et al. in preparation, Wisdom 2005). Models now can be synthesized regionally to enable assessment of the nutritional adequacy of habitats in relation to benchmarks for nutritional status and productivity of populations.

The emerging class of LFSMs offers great promise for synthesizing multidisciplinary land management, to respond to habitat issues and to the implications of climate change. Several federal research laboratories are already engaged in LFSM development, but these units contain little expertise relevant to game range ecology and thus have difficulty addressing multi-agent strategic issues, such as how big game and livestock populations could interact with forestry, climate, and fire to influence forest habitat mosaics over time. Federal emphasis on integrating ungulate research (e.g., deer, elk, cattle) with climate research and LFSM development is similarly low. Federal agencies could greatly enhance the relevance of their LFSM programs by adding relevant game range expertise to their staffs and by funding "cross-cutting" programs through interdisciplinary collaboration with public- and/or private-sector research units that do focus on aspects of game range ecology.

The relevance of federal assessment and planning processes to managing habitats for game species, and for nongame species as well, can be enhanced by greater emphasis on habitat dynamics at temporal and spatial scales that are relevant to landscape disturbance cycles and to wildlife population dynamics. The realism and utility of federal assessments and plans can be enhanced by increasing their emphasis on large spatial scales (e.g., state game management units) rather than small scales (e.g., sub-watersheds) and by increasing the weight given to long-term habitat responses (e.g., several decades) that exceed the time horizons of typical state or federal strategic plans (e.g., 5- to 10-year horizons). By enlarging assessment scales, particularly for strategic plans, the long-term implications of short-term decisions will be more clearly understood by professionals and by the public.

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Appendix 8. Remarks by U.S. Secretary of the Interior Dirk Kempthorne at the White House Conference on North American Wildlife Policy, October 1–3, 2008, Reno, Nevada

Thank you all, what a delight to be here. I appreciate the Mayor and his welcome to Reno. I was here about a month ago with the Mayor. He's invited me back next month because the Boise State Broncos will take on the Wolf Pack here. I arrived in Reno last night at midnight, quickly channel-surfed, there's the Boise State game so I was up until two a.m. May I just say what a delight to be here to look out and see all the friends. I mean, this is tremendous, Jim and Matt and Steve and Bob, John, all the good friends. I see a young marine here. John, God bless you. Thank you for your service.

Bob Model and I went hunting one time in Idaho and I wanted to show him the hospitality of Idaho so I knew a ranch where they've always let me hunt, but I always asked permission. So, I arrived and went up and knocked on the door and asked the rancher, a friend of mine, I said "Do you mind if we hunt your property again this year?" and he said "Oh, Dirk, I love having you here. All the good things you do. You always respect the land. You take care of the land. Have a good day." And, as I was about to leave, he said "May I ask you a favor?" I said "What's that?" And, he said "You know my old horse and you know how much I love that horse, but it's got arthritis. It just came up lame. We need to put him down and I don't have the heart to. Would you do it for me? I'd consider it a real favor." I said "If that's your request, I'll certainly honor it." So, I head back to the car to get my weapon. I'm thinking "What do I tell, Bob?" And I thought "Well, what the heck? Bob has a little sense of humor." So, he said "How'd everything go?" I said "Bob, I'll tell you what. This boy had an attitude. He told us that we're not going to hunt his property and it really kind of ticks me off. I think I'll show him a lesson." I grabbed the rifle, went, shot his horse. Next thing I know there's two more shots that go off right beside me. It's Bob. He said "I got his cow and his pig." But, we had a good day and we're going to have a good day here.

I'm sincere when I say that it's good just to wake up this morning and realize that I get to spend the day with good friends. We share a love for the great outdoors. I trust that you consider the entire team at the Department of the Interior as your friends and your partners. They've been working hard for this conference along with CEQ and Agriculture, all the other wonderful groups. President Bush and Vice-President Cheney and I wanted to set the bar high for the success of this particular conference. Today we meet as America is facing a crisis in our financial markets and some might ask "Is this the appropriate time to hold a national meeting on hunting and wildlife policy?" And, I would answer "Absolutely." While we're not facing an immediate crisis today, we're dealing with a growing crisis. Hanging in the balance is a future of hunting heritage and with it the future of conservation in America, the health of our wildlife, the health of our land, our water, our forest, our wetlands, and ultimately I would argue, the health of our people; not just the physical health—that's certainly part of it—but, our emotional and our spiritual health so intimately linked to God's beautiful creation. It is the nature of Americans to come together in times of national crisis. The world is seeing that, as we confront the current financial crisis, the labels of Democrats and Republicans they melt away. We are Americans. We will sacrifice what is needed; make the hard decisions that are necessary and work together to weather the storm to ensure the betterment and the prosperity of our more perfect union. Today, we're coming together at this conference in the same way. We're leaving the labels at the door. We are Americans representing a wide variety of backgrounds and political persuasions. But, first and foremost, we are Americans and we are here

to work together to build a better America, a more beautiful and healthy America for our children and our grandchildren to inherit.

This is not the first crisis that we've faced that threatens our wild places and wild creatures. A century ago, President Theodore Roosevelt presided over a nation that was fast depleting and degrading these precious resources. Many of the forests of the eastern United States were stripped bare to meet the nation's hunger for wood. Wildlife populations were decimated by market hunting and loss of habitat. Unrestrained economic development and poor agricultural practices threatened our land and our water. Roosevelt brought together national leaders of every persuasion: governors and senators and congressmen; scientists, in the first White House Governor's Conference on conservation. Together, these leaders laid the foundation for a conservation movement in America the likes of which the world had never before seen. It was a movement that led to the creation of the world's greatest system of lands dedicated to wildlife conservation, the National Wildlife Refuge System. It was a movement that led to sportsmen footing the bill for fish and wildlife conservation through license fees, state and federal duck stamp, excise taxes on hunting and fishing and boating equipment. It was a movement that led to the Migratory Bird Treaty Act which put to an end the wanton slaughter of our birds by market hunters and set the framework for managed harvest with seasons and with bag limits. It was a movement that led to the creation of conservation organizations such as the Boone and Crockett Club, Safari Club, Ducks Unlimited, Pheasants Forever, the Congressional Sportsmen's Foundation, the Rocky Mountain Elk Foundation, the National Wild Turkey Federation, the Association of Fish and Wildlife Agencies, and many others that have conserved millions of acres of wildlife habitat and helped bring back abundant wildlife. It was a movement that led to the establishment of the North American Water Fowl Management Plan, a model of international cooperation that has restored and conserved millions of acres of wetland habitat across this entire continent. All of this and so much more began a hundred years ago when a great American president perceived a crisis facing our land and brought together our leaders to meet the challenge.

Roosevelt understood the need for America to continue to develop economically, but he also understood that the conservation of land and wildlife was as important to the welfare of the American people as rising industrial production and corporate profits. "The object of government," he said "is the welfare of the people. Conservation means development as much as it does protection." He went on to say "I recognize the right and duty of this generation to development and use the natural resources of our land. But, I do not recognize the right to waste them or to rob them by wasteful use the generations that come after us." The century of conservation was born.

A few weeks ago, I was privileged to visit Theodore Roosevelt's Elkhorn Ranch in North Dakota. I stood beside the foundations of his cabin and I drank in the surroundings. I also had the chance to read Roosevelt's own description of the scene of what he saw a hundred years ago and how he reflected upon that; the cottonwoods that line the clearing and the river that ran past. Now, the river has changed course since then. I was surprised. It's moved at least a quarter of a mile moving, further from the clearing. But, you know what? There are new cottonwoods along that new cut of river. But, it truly takes your breath away still today. And, just as that river has cut a new path, we too can cut a new path in conservation. Today, we stand on the threshold of a new century, a new challenge is before us, a new crisis to face. America's leaders, you, meet again. Our charge isn't just to celebrate the achievements of Roosevelt and Leopold and Pinchot and others. Rather, we are tasked with building upon the great foundation that they have given us to continue their work in an increasingly urbanized world. We have the horsepower to do it. In this room are some of the most accomplished people in the history of conservation and hunting heritage; you wonderful people that have assembled here today. In order to meet this challenge, sportsmen must again take

the lead as they did a hundred years ago. We must continue to ensure as our predecessors did before us that our great tradition of hunting and fishing and other wildlife-dependent recreation remain strong.

As everyone in this room knows, there's a lot of reason to be concerned that it might not. The number of hunters and anglers are down. People have trouble getting access to places to hunt. Parents aren't taking their children hunting and fishing as they used to. The Internet, video games, and a hundred other activities compete for our young people's time and attention. Children are shooting firearms, but it's not from a duck blind. It's electronically from the couch. And, often the hunted and the electronic games are human. This gets us to the importance of our hunting heritage. Hunting allows us to travel to places we never would have traveled, to meet people we never would have met, connect with nature in unique and intimate ways.

While technology improves, the fundamentals of hunting remain unchanged which also allows us to connect with our past and those that came before us. In my gun collection, I made it a point to obtain a replica of a rifle that my Great-Grandfather, Charles Kempthorne, a private in the Third Wisconsin, carried to Antietam during the Civil War. It's a Springfield Arms model 1849 69-caliber, rifle barrel musket. I remember a clear Idaho afternoon when I visited a friend's ranch to hunt deer with that musket. Moving through a cornfield with husks brushing across the barrel of the long rifle, I was transported in my thoughts back to the battlefield at Antietam and the anxieties and bravery of a young infantryman. I wondered whether he felt brave or melancholy that morning as he walked through that cornfield. Was he reckless in courage or determined and contemplative? I never felt closer to my great-grandfather than on that afternoon. Even though the only shot that I fired that day was into a dirt mound when I cleared my musket, I had a great day of hunting. Hunting is a solemn and often solitary conversation that a hunter has within oneself inspired by the chase amidst the natural environments. It is both personal and it is profound. I came closest to walking in the shoes of my great-grandfather on that Idaho afternoon chasing deer. And, while I didn't kill a deer, I never would have found that connection were it not for the fact that I'm a hunter.

All of you in the audience have similar stories to share on why we care for hunting as an American tradition and why we're here today to preserve its future. President Bush, an avid hunter and angler, understands the importance of America's hunting and fishing traditions. That's why last year he signed Executive Order #13443 entitled "Facilitation of Hunting and Hunting Heritage." We're here today at the direction of this Executive Order. We're here to—among other things—develop a comprehensive, ten-year recreational hunting and wildlife conservation plan that will set forth an agenda for meeting the goal of supporting our nation's hunting heritage so that conservation in America will continue to be strong. The President's order also directs us to work closely with state wildlife agencies and Sporting Conservation Council to establish both short-term and long-term goals. Over the past year, we've done exactly that. We've worked closely with a diverse cross-section of federal, state, local, tribal government officials, members of Congress and their staffs, sporting and conservation organizations in the private sector. We've engaged in an intense effort to identify 21st century conservation issues and develop white papers outlining innovative ideas for consideration at this conference for possible inclusion in this ten-year plan. We held a technical workshop in Denver we're we heard from experts, scientists and land managers. We hosted a reception at the Department of the Interior to commemorate the anniversary of the White House Governor's Conference and Conservation and publicly initiate the policy development process that will culminate in these next two days. We held a policy workshop in Washington where we met with policy leaders from major organizations and congressional staff. We participated in more than fifty individual and group meetings with conservation groups,

environmental organizations and congressional staff. And, late last month, we met with the Congressional Sportsmen's Caucus to get its members' comments and ideas, a number of you were there for that meeting, as well.

We've done our homework. Now, we have arrived at the moment when together we must pass the test. We must take all the work that we have done and combine it with your great expertise, your long experience to chart the course for the future. Let me suggest this test has three parts. We must pass all three. The first is a battle of the heart. The second is a matter of government policy and the third is strengthening partnerships.

What is the battle of the heart? It is the battle of the hearts of our children. One of the fundamental truths of conservation is that if people learn as children to love the land and its wildlife, they will take care of it when they are older. Each of us in our own way has a passion for what is wild and free. It is a passion born at dawn as the early morning light peeks through the leaves to find a parent and a child in a duck blind. It is born at twilight when a canoe slices through the still waters of a mountain lake. It is born at night around a camp fire with crickets chirping and shooting stars streaking across an inky sky. We can come up with wonderful plans for the future of hunting and conservation in the next two days. But, if we lose the battle of our children's hearts, if we don't find a way to light that fire of passion in them, then we will not succeed.

Many organizations are already taking the initiative. Ducks Unlimited has its Project Webfoot. The National Wild Turkey Federation has its Jake's Program. The National Shooting Sports Foundation has its Families Afield Program. I have a great appreciation for Catch A Dream, an organization that fulfills the dreams of young people with life-threatening illnesses to go hunting and fishing. Can you imagine if each of you went back to your state and helped an organization like that, what it would mean for those children? At the Department of Interior, we have our "Get Outdoors, It's Yours" program. If you put all of these programs under an umbrella, you could simply call them No Child Left Inside, that's our goal: no child left inside. Do you remember when you were growing up how you felt when one of your parents said it was time to come in? Today's children don't want to go out.

Secondly, we must ensure that government policies promote hunting. The Executive Order directs federal agencies to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat. We've done this and we will continue to do this. For example, we've developed more mentoring programs to young people who come from non-hunting backgrounds. We've created more incentives for conservation on private lands. We've developed new policies and programs to protect wetlands and grasslands. We've worked to protect wildlife including increased access in protecting wildlife corridors while increasing energy security. We've made sure that when we collect and utilize data on climate change that hunters, game species, wildlife habitat are also taken into consideration. And, we've opened up more hunting programs on national wildlife refuges and other public lands. We've just posted to our website "Your Guide to Hunting at National Wildlife Refuges," the first comprehensive compilation of all hunting programs on the wildlife refuge system. It's part of our effort to invite families to return to the hunting activities that have connected their generations to nature and to cultivate new hunters to share in wildlife conservation and our hunting heritage. We've also increased the use of hunting as a wildlife management tool on national parklands where it's legal and, for the first time, authorized hunters to participate as qualified volunteers in culling operations in these parks. We've even established a hunting program on Apostle Island's National Lakeshore in Wisconsin, part of the National Park Service. Many of the islands in the park are over-populated with deer herds. We've set up a hunting program to cull these herds and a telephone number where hunters

can learn about it. This program is in jeopardy, ladies and gentlemen, because we're having trouble getting hunters to participate so please spread the word, give them a call. We need your help.

We do not know who will take office as President next January, but we've laid a foundation for the next administration to build on in support of our hunting, fishing, and other outdoor traditions. There are also a number of things that we can do right now that do not require a policy process, legislation, or board approval. We can contribute to organizations and programs that work to get kids outside. We can volunteer to help refuge and park managers run hunting programs. It doesn't have to be that much of a time commitment. We can take a niece or a nephew to a hunter's safety course or on their first deer hunt this fall. We can take the time to explain why hunting drives conservation to a neighbor across the fence who thinks the term "sportsman conservationist" is an oxymoron, because, if we get one more child outside or create one more conservationist, then we are winning.

The final part of the test that we face is to strengthen our partnerships. This may seem like building a viewing tower on Mount Everest since no one in American history has done partnership like the sportsmen community, but the challenge before us is so great that we must re-double our commitment to work with each other to ensure the future of the traditions that underpin conservation in America. So, as we begin this conference, let's set before us some goals. Let us be committed to leave here with a real result, a ten-year plan, a road map to follow; let us be innovative. We can and we must find new ways not thought of before to support our hunting, fishing, and other outdoor traditions.

And, finally, let us continue to be passionate. Let us remember the call of the wild stirring in our hearts, the seeds planted in us as children that brought forth the love of nature and its myriad of creatures. We are now sowers of those same seeds; may we indeed sow them generously. I'm confident that together we'll pass the test. We'll create a legacy equal to one birthed a century ago by Theodore Roosevelt and the leaders of his day at that first White House conference. We will create a conservation ethic for this, our 21st Century. We're equal to the task. The power is in this room. The vision is in this room. The passion is in this room. Let's set about it and do it. God bless you.

Appendix 9. Remarks by Chairman of the White House Council on Environmental Quality James Connaughton at the White House Conference on North American Wildlife Policy, October 1–3, 2008, Reno, Nevada

Thank you very much. Good afternoon everybody. This has been a great day hasn't it? Just a fabulous day. And I'm particularly pleased that we're all here together for Rob Teck's audition for his next job, so let's give Rob a hand out there in the back. I've had such a great privilege getting to know a lot of you, and getting to know even more of you at this session.
And, I have a great privilege working for the President of the United States, and I have a great privilege working on Jackson Place, because Jackson Place actually carries the ghost of Teddy Roosevelt. If any of you read Theodore Rex , there's an amazing scene actually when Teddy Roosevelt actually injured his leg, the White House was being renovated, and he actually holed up on Jackson Place, actually at 722 Jackson Place, which is CEQ's headquarters. So I carry that with me, and whenever I walk into the space in those old houses, he's there.

But, let's think about that. Let's think about 1908. We're here on the hundredth anniversary to celebrate that, and think of it. It was Teddy Roosevelt bringing the governors to Washington to talk about conservation, to deal with the significant issues that were occurring outside of Washington. So, you had T.R. for those couple of days going in and out of the sessions, and you know you had less than fifty governors at the time.

Now what would Teddy Roosevelt think today that we're holding a conference in Reno, back out in the land in the area that he loved so much with more than five hundred leaders of the NGO Community, state legislators, senior federal government officials, senior state officials, other interested parties and even the media attending this conversation? I think he'd be proud. And, imagine the army of conservationists that he could only have imagined and he talked about back in 1908, but that has been fulfilled by the presence of all of you here today. So, that's what this conference is about. It's that carry on of the legacy, and it's the fulfillment and the filling out of that vision. So, just reflect on that. It's no longer about the President and governors. It's about all of us working together.

And, let's think of the group that we're here with today. So, I just want to make a few acknowledgements. I'm just so delighted to be here with Dirk Kempthorne, one of the most wonderful Secretaries of Interior I think this nation has ever enjoyed. So, please, Dirk, great to have you. We're looking forward to hearing from Ed Shaeffer. It's been great to have him on board, and you'll be hearing from him tomorrow. We've had a great working relationship, and he's certainly carried on the legacy of USDA in fulfillment of our conservation mission. And, of course, we have the session leaders today for the breakouts. I decided this time not to be, you know, be up there in people's face because you're going to have to deal with me now. But, really I wanted to hear what was going on in each of the sessions, and I thought this morning there was a lot of talk from the panels. This afternoon all of you didn't let them get away with it and I was really pleased to see the interchange coming in from the larger groups.

So, it was really wonderful to see that unfold today. It's great to be here with Jeff and Dave, and of course, Bob Modell's down here. Let's all give Bob a hand for his work leading the Sporting Conservation Council, which has been so instrumental in getting us to this point.

Just a few more acknowledgements, CEQ, for many of you, you've had a good interface with it, but CEQ is the ultimate in inside baseball. We're the players that work on behalf of the President. We

try to keep our heads low, try to get the policy moving. But, this conservation policy is the product of many people. But on my part, in my job I have to acknowledge three in particular. They are three people of this community. They are three men for this community, and even as they change their roles and their positions they remain dedicated to this community. So first of all is David Anderson, who originally worked with me at CEQ. Secondly, is Mitch Butler who's now over at the Department of the Interior, and third Greg Schildwachter. I mean, these guys have done an amazing job, amazing job.

And finally on acknowledgements, and then we'll get to the meat of the matter. Just as we got this conversation started with those meetings with the President out on the ranch, we put this conversation in context at the Cooperative Conservation Summit. Pulling this together ain't easy. And, so I just want everybody, if you would, to acknowledge Jim Gasser who's basically been the stage manager of this event who is just a tireless, a tireless civil servant to get this job done right. And, all of the people in the room, and actually the people you don't see right now outside of the room, they all have red ribbons on their badges and it's called "staff." If you could all give them a round of applause, but more importantly, when you leave the room please shake their hand, thank them. They're the ones making this conversation possible, so please give all of them a hand.

Alright, now to the meat of the matter—the meat of the matter. What are we doing here for heaven's sake? Well, I've pleased to work on behalf of President George W. Bush, who is a true conservationist and a true sportsman. When I came on board with the campaign, helping with policy, when you think of all of the things that a candidate has to worry about, when you think of all of the issues that really are sort of the top tier, what gets you elected, what doesn't get you elected, when you think of all of the things that intrude - his passion, his personal dedication to conservation was at the top of the list. When I came into my job and we were working through the agenda of what it is we want to achieve, it wasn't a fly-by-night commitment. It was a commitment. What can we do now? What can we do over four years? And, what can we do through a two-year term? And, we mapped that out. A lot of his personal reflection, a lot of his ideas, his ideas generated from this community, and so really it was the embrace of the work that you had done toward the backend of the '90s and pulling together that shared vision. But, then it was trying to lift that further. How do we move that into the day-to-day thinking and operations of the government? And, not just the traditional allies in the government, and the traditional government people. So, we've tried to carry that forward.

And as you know, the President has said many, many times in many contexts, "We're going to sprint to the finish." And, that's what today is about, at least for us, Dirk Kempthorne, me, Ed Shaeffer, Mark Rey, you've got Lyle Laverty, you've got Dale Hall. We're here to sprint to the finish. That's why I'm here is to sprint to the finish. And, there is a lot we can do in the months that lie ahead, but as important, is the foundation we are laying for the years that follow.

And, so as we think about our mission here today, we can reflect on the Olympics, right. We all love the Olympics, don't we? Let's all reflect. What's our favorite part of the Olympics? We all have to confess it. We love relay races, right? I mean, as much as you love Michael Phelps, you know going out there all by himself, the cooler race was the relay race. That's the one we love. The American team doing the track and field relay races. That is what the conservation mission is about. And that's what this conversation is about. We are one leg of a relay race that's going to take us through this next century.

The ten-year action plan that we're working on together that's going to be the product of today's conversation is not a ten-year plan, it is the foundation for a one-hundred-year outcome. That's the way we have to think about this. And so as we sprint to the finish, our finish is the hand-off of the

baton to the next administration, to the next Congress, to the next set of governors, to the next set of state officials, to the next set of leaders of your organizations one of whom could well be my son, your daughter. That is what this conversation is about, so we have to know that. It's not about any individual group or any individual one of us leaders.

And, so I want to then put in context, sort of start a little bit personally and then I'll go out a little bit wonky, policy wonky, but I want to start personally because what is the hand-off about? The hand-off is about the person you're handing to being equipped to take a clean hand-off and run with it. Those people, of course, are our kids. I'm a proud father of a seventeen-year-old, and a proud father of a fourteen-year-old. My seventeen-year-old boy just made Eagle Scout. My daughter is a girl who could be the next nature artist. You wouldn't imagine her connection with the out-of-doors. These are the people we're reaching. They are the next generation of leaders. But not just leaders, it's "livers." It's the next generation of people who find in the out-of-doors that livelihood, okay, that part of life that has nothing to do with earning a living. It has nothing to do with what you're studying in school. It's that being that we all find in whatever the pursuit is, whether it's hunting or fishing or sailing. Whatever that pursuit is, it's finding that very personal space in the out-of-doors. And so as I think of that, and I think it's not just the experience.

I just want to share with you an anecdote. My son's a Boy Scout as I indicated. What is it special about the out-of-door experience? It's not the gear. It's actually not the take-down. It's not the, you know, catching that fish on the hook. It's not making that rounding on the sailboat mark. It's not even discovering that really cool eel when you're scuba diving. What I find most interesting and important about the out-of-doors with our kids, I call it the "hour-in" time. Okay, now, what does that mean? The hour-in time, Well, whatever I'm doing, it's when I'm an hour in to the hike, that all of a sudden my son starts opening it up and telling me all kinds of wild stuff I never heard before. Right? It's that hour in to the bike with my daughter when all of the sudden she says "You know, Daddy," and she'll tell some problem she was having at school. It's that hour-in after we've done the dive and we're about to change gear and we're waiting to do the next dive, that my son comes up with the most incredible idea for a new business that one could ever imagine, and he really wants to talk to me about it. But, you know, the day-to-day running home from work, doing dinner, getting homework done you don't have the time to just have that occur. And, so when you think of the hunting experience, it's the hunting, it's that experience. It's the fishing experience. It's the hiking experience that let's you settle in to that kind of connection that we often lose in our more highly-urbanized existence. That is what we're doing here, okay, so I just want to be sure as we think of all of the mechanics of what we're dissembling, it's enabling that experience, that community, that family experience, that's what we're doing.

And, so how do we get that? How do we get that? Today's conversation's all across the board. We talked about marketing, and how do we get more people involved? Everybody was energized. Without saying it, we're trying to get the tools that allow that experience to happen. So, in keeping with that, I just want to offer you some of my ideas to add to the hundreds that I heard today that have all now been recorded. There's a lot of talk about getting kids out for the hunting experience. A lot of talk. How do we get more kids out? Talk about getting it into the curriculum. I think all of that's good, but it's still the case you just got to have the experience. Somebody who loves to hunt has to share that experience with someone who's never been hunting. I still think that's the most vital component. And, all too often when we do our activities, I'm guilty of it too, I tend to grab the people who already like it and I bring them with me. And, I don't stop and say "Oh, who are the four people that have never gone before I'm going to show it to?" And, until every one of us says "Every next trip we take we're going to take someone who's never done it before," we're really not going to make the level of progress that we've talked about today.

And, this is not just bringing a kid along. You actually have to bring some parents along too. My wife has never been hunting. I bet she'd love it. I bet she has no interest in shooting, by the way, but I bet she'd love to go along. Once she does one or two trips, she's going to be hooked. But, we haven't had that experience with her yet. There are people I know who, you know, who I do with Boy Scouts. Okay, there are men I know, they have just never been hunting, so they would feel very awkward bringing their sons hunting. And, unless you're bringing them with their son hunting, they're not going to really get it. So, there are some actually people, you know, in our generation, in my generation, who themselves need some mentors to really understand this experience. So, that's sort of one. There's a gap, not just with the kids, but also with some parents. And, so we've got to fill that gap.

Two, we heard about marketing. One of the most powerful tools of marketing is cross-selling. Why is Burger King right next door to McDonald's right next door to KFC? Why is Applebee's right next door to Ruby Tuesdays? Because after awhile, the people who kept going to Ruby Tuesdays say "Oh, let's go someplace else but let's hope it's similar." And, so they go right next door to the next shop. Cross-selling is a huge opportunity for the hunting community. There are kids who are out there skateboarding, outside spending hours skateboarding. Kids who are scuba diving. Kids who are mountain-biking. Kids who are athletes on teams. Kids who go river rafting or kids who go sailing. If those kids will go out for those experiences, give them a few hours out hunting, you're going to have them hooked too. And, the convenient thing about hunting, by the way, is some of these other sports you kind of age-out of them, I hate to say it, but hunting you've got for life. So, let's look for the opportunities to cross-sell.

Third, finally, is kids in their own domain. Face it, a bunch of us are old fogies and I think I count in that category now. It was Jack Welch at GE who had the inspiration, he told every one of his business leaders when the computer boom was really starting to happen in the early '90s, he required every one of them to hire a teenage kid and parked them next to them so they could teach the leaders about how the computer world works.

How the Internet works. How those kids are thinking. They shadowed those business leaders full-time. You know, these kids out-of-college, who really knew the tech world full-time. We have to understand the kids in that domain and see what translates from that domain into this experience. And, it's great because there is all kinds of great gear and opportunity to make those inter-linkages. It just hasn't happened yet. So, we have to be a little bit humble and say "Hey, what is it kids can teach us about how to make this experience more vital, more interesting, more relevant and exciting with the way that they interact with each other and with the outer world?" So, that's sort of my issue on access and awareness and education. How we begin to build and rebuild the hunting community.

Now, how do we get them there? What's the big picture? What are we after? We were back with Jeff and Dave and Rob and the question was "So now what?" "So now what?" So let me answer the "So now what?" question. First, I talked about the high-level vision, that reconnection. But, that reconnection comes with providing access and opportunities. Back in St. Louis when we had the Cooperative Conservation Summit, I laid out four organizing concepts, and I'm really delighted as I stand here today, that we have continued to make progress on them. But, I think that we still have to have in mind in the age of Google Earth the principles of greenways, blueways, flyways and byways. And the idea is on this great nation, this national map, you know we look at a map and we see roadways and pipelines and transmission lines and cities. Then every now and again, you see these parks, right, and it's like a soup where, you know, you have a park here, a park here and a park there. This community knows better than anyone else, it's the interconnection of our landscapes. It's the relationship of our landscape to the blueway and flyway. It's the experience of

going to these zones and having a sense of history that you can attach yourself to, which are the byways—the traditions, the old cabins, the old places.

If we can create together a one-hundred-year vision of interconnecting these places so that what was a gray and brown and asphalt-based map that we look at every day turns into a tapestry of green and blue, you know, and rich orange, that as an organizing principle will help us knit together these habitats that then we can all go frolic upon, both public and private.

So, how do we get there? This ten-year plan we're working on is going to have a series of actions, but also a series of institutional arrangements that are going to help us carry that forward. And so as we work our plan, with Dirk and with Ed and the others, we are we are dedicating the next three and one-half months to ensuring that the senior career leadership of the agencies has a clear set of direction that they can carry forward with the ability of whoever the new President is to modify, to amend, to change. But, we are not going to leave a blank slate. Together, we are going to leave a full menu and those menus will have opportunities and actions that will keep the federal process alive as the government restaffs up. That will provide a whole series of initiatives for the next President, whoever he may be, to take full credit and put his name on it.

This is a relay race, right? This is the team that we do together. And so, the more aggressive we are the next three-and-one-half months in defining more and more of these opportunities, we can hope that all of them are followed up on. But, they are only as good as the institutional frameworks. And so, we got a lot of advice on that here today, and we're going to carry that advice forward. Some things we'll be able to say "relatively soon, so stay tuned", other things we'll need to work on over the next coming months. But, we have to institutionalize this so it doesn't ride on the power of individuals. So, it doesn't rest alone on Dirk Kempthorne or on Jeff or on Dave. So that it's actually a living process that everyone's part of and can buy in to. That's what we're gong to do as well.

And so, with our Olympic analogy in mind, I ask all of you: "Are you running as fast as you can?" "Do you have a good grip on the baton?" and "Is the person ahead of you ready to reach back and receive it cleanly and race ahead even faster?" That's the challenge we all face, and the great thing about America is we know we tend to get the gold in those events. So, look forward to working with you.

Appendix 10. Remarks by U.S. Secretary of Agriculture Ed Schafer at the White House Conference on North American Wildlife Policy, October 1–3, 2008, Reno, Nevada

Thank you all very, very much for that warm introduction. I want to congratulate all of you for the passion, partnership and dedication that bring you here this week. And I thank you for making history.

Perhaps one day, a century from now, when our great grandchildren and their children look back on the state of wildlife conservation and hunting opportunities on public lands, they'll view October 2008 as a milestone in the nation's conservation history, thanks to the goals you've set and your work to get us there.

This is just the fourth such national conference on conservation. It's humbling to consider the landmarks we're following this week—the White House Conference of Governors of 1908, the American Game Conference of 1930, and the North American Wildlife and Natural Resources Conference of 1973. It's even more humbling to reflect that we're walking in the footsteps of visionaries like naturalist Aldo Leopold, and the father of American conservation, President Theodore Roosevelt. I am a lifelong student of Theodore Roosevelt.

A young Roosevelt came to North Dakota, my home state, at a difficult time in his life. His wife and mother had died on the same day. Broken in soul and spirit, he came to the majestic spot in western North Dakota we call the Badlands. He made his home near a place called Medora, at the Elkhorn Ranch. Ranching was good for him. In his own words, "The charm of ranch life comes in its freedom, and the vigorous, open-air existence it forces a man to lead." That land is where I grew up. It's something that I've enjoyed, cherished and never taken for granted.

You can imagine how I felt, then, when the opportunity came about to help the U.S. Forest Service acquire the 5200-acre Elkhorn Ranch. I was delighted to jump in and help with the project, which we completed last year. In the course of that work, I had the pleasure of meeting Simon Roosevelt, Theodore's great, great grandson. We're honored to have him here in this audience today and I'd like to ask him to stand . . . .

At Elkhorn, Theodore Roosevelt learned to rope and ride. He became an avid hunter and lifelong outdoorsman. As he came to appreciate the many uses of the land, he grew concerned about civilization's impact on the land, on native animals and wildlife. For Roosevelt, the North Dakota Badlands were healing, and they were enlightening. The Elkhorn Ranch, now adjacent to Theodore Roosevelt National Park, helped shape his character and inspire his conservation legacy. No wonder many conservationists consider Elkhorn "The Cradle of Conservation" in America. As Roosevelt himself said, "Had it not been for the years spent in North Dakota and what I learned there, I would not have been President." What we're doing here this week is celebrating and building on one of the great achievements of the Roosevelt Presidency.

In 1908, when President Roosevelt invited the Governors to the White House Conservation Congress, he wrote: "Facts … force me to believe that the conservation of our natural resources is the most weighty question now before the people of the United States."

"If this is so, the proposed conference, which is the first of its kind, will be among the most important gatherings in our history in its effects upon the welfare of all our people." One hundred years later, the conservation of our natural resources is as urgent an issue for the start of the 21st century as it was for the 20th. With his Executive Order last year, President Bush asked us to

look at the wildlife problems of our times. He asked us to set the stage for modern professional wildlife conservation. In many ways, this is a deeply felt request. The President is an enthusiastic hunter, fisherman and landowner. Like us, he's committed to the hunting heritage and the future of wildlife conservation. And like us, he recognizes that we face tough challenges—urban sprawl, forest fires, drought, fewer people taking up the hunting way of life. These issues and others have the potential to seriously limit hunting and wildlife conservation. The President is sounding the call that the time to act is now.

With these challenges in front of you, you've given a year of intense, dedicated effort to bring a strong, bipartisan voice to this conference. I greatly appreciate that. My thanks to the Sporting Conservation Council and American Wildlife Conservation Partners for responding to the President's Executive Order with partnership and diversity. You're bringing a clear vision to the President's request for a 10-year Action Plan that will guide future Administrations and shape conservation policy for this century. This is a partnership we value and depend on . . . just as USDA needs your perspective as we build on gains for restoring wetlands and improving habitat for many species. Last January, for example, we launched what we call "SAFE"—that's State Acres for Wildlife Enhancement. This program, which fine tunes the Conservation Reserve Program, is quickly becoming a success story. And it wouldn't have come about at all if it weren't for the vital support of conservation groups like Pheasants Forever. "SAFE" projects aren't a shotgun blast approach to conservation, but a series of targeted rifle shots. Most contracts cover smaller acreages. They focus on habitat needs of wildlife species that have environmental, economic and social value. This is cooperative conservation at its best, showing once again that production agriculture and good conservation can work hand-in hand.

Well, last January was a big month for conservation. We also celebrated the 1 millionth acre enrolled in the Conservation Reserve Enhancement Program. From coast to coast, on over a million acres in between, CREP has been tackling some of our most urgent and challenging problems, like protecting endangered salmon in the Pacific Northwest. CREP agreements address something that's easy to lose sight of. Half the nation's total land area is used for agricultural production. In other words, the care of 50 percent of all our land is in the hands of our farmers and other landowners who represent less than 2 percent of our citizens.

I know what farmers who understand the environmental needs of their own piece of land and who love that land can accomplish. Each day they weave a part of the American rug—ecosystems and watersheds—that Aldo Leopold spoke about 70 years ago.

And I'll share with you one more conservation success story. You may be familiar with the Prairie Pothole Region of the Northern Great Plains, covering nearly 350,000 square miles, from the U.S. into Canada. I have some good news. The U.S. Geological Survey recently found that the CRP and the Wetlands Reserve Program have benefitted more than 5 million acres of wetlands and grasslands habitats in this region. The voluntary conservation efforts at the heart of these programs benefit wetland acres that provide critical breeding, nesting and brood habitat in what's known as the nation's "Duck Factory."

For the past six years, the Administration has made habitat conservation a priority under the 2002 Farm Bill. That legislation was the largest commitment of resources to conservation on private lands in U.S. history. Now we're excited about the potential built into the 2008 Farm Bill.

Thanks to your partnership, we have legislation that builds on the 2002 legislation. It increases the nation's investment in conservation programs by more than $4 billion over the life of the bill. That's a jump of 38 percent over the 2002 legislation. The new bill reauthorizes all key programs

in our conservation portfolio. We're particularly pleased that Congress followed our direction and expanded EQIP (Environmental Quality Incentives Program).

What does all this mean for our hunting heritage and wildlife habitat? From the Chesapeake Bay Watershed to the nation's farm and ranchlands, grasslands, and wetlands, the bill's conservation programs will have a positive impact on wildlife habitat across the board. You should be proud of that accomplishment. And keep in mind that it comes on top of the gains of the past six years. For example, this week we're hitting a new milestone—2 million acres enrolled in the Wetlands Reserve Program, one of our key wildlife programs. Like so many of our programs, the WRP represents locally-led conservation. We look to you to help us achieve harmony between man and the land. As conservationist John Muir said over a century ago, "When we try to pick anything out by itself, we find it hitched to everything else in the universe."

Early in the last century, at the prompting of visionaries like President Theodore Roosevelt, John Muir and Gifford Pinchot, we set aside the nation's "special places"—national parks and forests. Today, the 193 million acres that USDA's Forest Service manages are among our nation's greatest treasures. They're home to 80 percent of the elk and bighorn sheep habitat in the continental U.S. … 5 million acres of wetlands … and 2 million acres of lakes. With this kind of awesome responsibility, we're grateful for your partnership last year in restoring nearly 25 hundred miles of stream habitat … plus 270 thousand acres of wildlife habitat across this great country. These are the kind of actions you take, quietly, constantly, side-by-side with us, to hold onto the character of our land.

This week, we have the privilege and burden of charting a national course for wildlife conservation and our hunting heritage for the 21st century. We're here with the same sense of urgency that prompted Theodore Roosevelt to call the Governors together a century ago. Building on his legacy—and driven by our sense of what's at stake for our lands and wildlife—we have the opportunity to leave our own historic mark on this great nation. Let's make TR proud. Thank you.

Appendix 11. Remarks by Vice President Dick Cheney at the White House Conference on North American Wildlife Policy, October 1–3, 2008, Reno, Nevada

Well, thank you all very much. A warm welcome like that is almost enough to make me want to run for office again. (Laughter.) Almost. But I'm delighted to be here this morning, and I appreciate, of course, the warm welcome and the very rare privilege of being introduced by the President of the United States. That doesn't happen very often when you're the Vice President. I've taken a lot of grief over the years, obviously, for that hunting accident in Texas—most of it from the President. (Laughter.)

I will never forget walking into the Oval Office after that happened. And fortunately, my friend recovered and is in good health. But I walked into the Oval Office that day and the President looked at me, and he said, "Dick, here I am 30 percent in the polls, and you shot the only trial lawyer in Texas who supports me." (Laughter and applause.)

And of course, the President was hoping to join all of you this morning. He's been heavily committed this week, though, in terms of the events on Capitol Hill. After many turns in the road, the House is supposed to vote—could be any minute now, frankly—on the revised financial rescue package that's been before the Congress for these last couple of weeks. The revised bill increases the limit on insured deposits to $250,000, and includes tax incentives for business to invest and expand and create jobs.

Nobody is happy about the current mess on Wall Street, but without decisive action by the government, there is a real concern that the problems we're seeing today could get worse—indeed, parts of the credit market have already effectively seized up. As President Bush said, the choice is between "government action and the real prospect of economic hardship for millions of our citizens." The financial rescue package clearly serves the national interest. The President, I believe, was right to propose it, and we look forward to having the opportunity to sign it into law.

As we gather here in Reno, I want to thank our many distinguished guests, including two fine Cabinet members. Agriculture Secretary Ed Schafer and of course Interior Secretary Dirk Kempthorne have been with you. And it's a pleasure, as always, to see the Governor of Nevada, Jim Gibbons, who is an old friend. And I also want to thank Bob Model, Chairman of the Sporting Conservation Council—a Wyoming boy. Bob and I shared a day on the Bighorn River together some years ago in Montana. And Steve Mealey, here as well, used to be the forest supervisor on the Shoshone National Forest in Wyoming when I was the Congressman from Wyoming, and a senior member of the Public Lands Subcommittee, and Steve and I had occasion to take many official trips to the backcountry in Wyoming during those days. (Laughter.)

But it's great to see all of you in attendance today, because this is an extraordinarily important conference. The idea for a Conference on Wildlife Policy originated last year with an executive order. President Bush directed the Chairman of the Council on Environmental Quality, Jim Connaughton, who's with us today, to work with the White House and the Departments to convene this meeting. And I want to thank everyone who worked so hard to make it successful. As all of you know very well, President Bush made wildlife conservation an early and a high priority of his administration. We've carried out that commitment in these eight years—and we've been proud to have people like you as partners in the enterprise.

The men and women in this room understand what conservation is all about. It means reverence toward creation, and a commitment to faithful stewardship. It means guarding our spectacular

wildlife populations—not just for our own time, but for all time. Conservation also means passing on a way of life to the next generation—a tradition of sportsmanship, cooperation, and respect for the natural world.

This ethic was embodied in the life and the work of Theodore Roosevelt. As an avid outdoorsman, Roosevelt saw firsthand the ignorance and excess that were destroying America's wildlife, scarring the land, and putting natural resources in danger. He wasn't the sort to stand by and let that continue, so he brought together the nation's governors for an historic meeting on conservation. As a group, they declared that "Conservation of our natural resources is a subject of transcendent importance, which should engage the nation, the states, and the People in earnest cooperation."

From the time of that conference, 100 years ago, until this very day, we've been a nation that takes conservation seriously. No other country on earth does a better job than the United States in respecting the environment and caring for the wonders of nature. And one of the reasons for that leadership is the active concern and participation of the American sportsman.

Sportsmen tend to be the best informed and most determined advocates for sensible wildlife and habitat conservation. Every year, people like you give thousands of hours in volunteer time to improve wildlife habitat, to educate fellow citizens on the importance of conservation. Last year alone, sportsmen across the nation provided hundreds of millions of dollars for wildlife restoration. You don't just talk about the issues that matter—you back it up with money, with time, and with effort. You've proven that the people who are closest to the land are usually the ones who do the most for the land. Our whole nation benefits from the wisdom, the daily work, and the common sense of the American sportsman.

We must never lose sight of a basic truth: When it comes to wildlife and natural resources, the sum total of wisdom and concern is not contained in the office buildings in Washington, D.C. As President Ronald Reagan once said, the American people "have as much concern for the preservation of the beauty and the open space in their states as does the federal government. I just cannot believe that a little elite group in Washington has a conscience and that the people themselves do not."

President Bush has spent eight years encouraging a spirit of cooperative conservation—engaging the whole nation, and making sure that voices like yours are heard in the corridors of power. The President has met regularly with sportsmen and leaders of hunting and conservation groups. He's listened carefully to what American hunters have to say. And I'm proud that many of your good ideas are now at the center of our conservation efforts. We set clear goals to improve habitat, to enlarge wildlife populations, and to increase opportunities for citizens of all ages to enjoy the great American outdoors. And together, we are meeting those goals.

We're working together to protect wildlife in America's forests. During our administration, the Forest Service was partnered with hunting groups to improve habitat for game species such as elk and deer. As a result, across broad stretches of federal lands, the animals now have better food and cover, which can lead to healthier populations. And in 2002, President Bush took one of the most significant and positive environmental steps in our lifetime when he announced the Healthy Forests Initiative.

In an age of increasingly violent wildfires, the Healthy Forests Initiative was critical and long overdue. As the President said, "the kindling on the ground, the decades of neglect, the decades of failed policy have meant that our forest fires are incredibly hot, incredibly catastrophic." Under Healthy Forests and the National Fire Plan, we have thinned and removed underbrush and carried

out other landscape restoration across nearly 26 million acres. This, too, has made a tremendous difference in protecting animal habitat, food sources, and hunting grounds.

With Healthy Forests, as with other policies, the theme was cooperation. We talked to everybody. We got excellent advice from the people who manage the forests, and work in them, and hunt in them. And because we've acted sensibly and decisively, more of America's forests will be alive and healthy for generations to come.

These have also been years of progress and improvement for America's wetlands. Wetlands and marshes are the nurseries of many types of wildlife, and up to half of all bird species on this continent nest or feed in our wetlands. These areas also provide great recreational opportunities for those of us who like to fish and hunt. Four years ago, President Bush committed the nation to restoring, improving, and protecting at least three million acres of wetlands over a five-year period. I'm pleased to report that we've met this goal, and we've done so one year ahead of schedule.

Many of you have worked extremely hard to help revive these vital ecosystems, and appreciate all you've done. In every way possible, we've tried to encourage and support the participation of sportsmen and landowners in our conservation efforts. We've expanded federal tax incentives to encourage private property owners to designate their property for conservation purposes. The response has been strong and positive. Through the Conservation Reserve Program, we are helping ranchers and farmers to restore grassland habitat.

Since 2001, we've enrolled more than one million new acres in this program—and this has yielded important new nesting habitat. I've heard President Bush himself talk about how rewarding it is to make your land hospitable for wildlife—down at his ranch in Texas, they've cut underbrush, planted native grasses, and restored the land to wild prairie. Their grasses and wildflowers are now home to ground-nesting birds. And after years of hard work, he and Laura now hear the call of the bobwhite quail on their property.

I've heard similar stories from other land owners—and taken together, they add up to an enormous benefit for our nation. It's worth remembering that the federal government owns or manages one of every four acres in America—and that means we need to work with the people who own the other three-fourths. Let's get more wildlife habitat in the sensible way—by encouraging private owners to do the job themselves, not by starting up another federal land-grab.

When it comes to the use of federal lands, we have worked together to ensure reasonable access and responsible use by sportsmen, hunters, and conservationists. Since 2001, our administration has launched scores of new hunting and fishing programs on National Wildlife Refuges. We are working with 40 sportsmen groups to further improve access to hunting and fishing on federal property. We're also making it easier for sportsmen to know where it is legal to hunt, by marking access points, improving highway signage for trail heads, and providing electronic maps online.

These steps are also helping to raise and train the sportsmen and conservationists of tomorrow. Our administration is encouraging young people to learn about the outdoors through federal programs like "Kids in the Woods"—which works to teach children about conservation and the role of responsible wildlife management.

Private organizations, as always, are doing their part. Pheasants Forever has a program to solve what it calls America's "Nature Deficit Disorder." And they've given the program a great name—"No Child Left Indoors." Ducks Unlimited has created "Project Webfoot" in America's classrooms to promote responsible stewardship of our wetlands. And from the Boone and Crockett Club to

the National Wild Turkey Federation, sportsmen's groups are promoting a culture of conservation that will be sustained by our children and our grandchildren. These programs also remind young people that getting out of the house, going out into the wild with your Dad or Mom, and encountering the natural world can be a fun and exciting way to spend a day. More than that, it creates memories you'll carry with you for a lifetime.

Most of you here today know that experience. And you can be proud of the work you've done as citizen-conservationists—whether in passing along noble traditions, or in bringing your good influence to bear on public policy. I've pointed out some of the great progress we've made by working together. With this conference, we're taking another step forward, by laying out a ten-year Action Plan that will shape hunting and wildlife conservation for the 21st century.

Yet even as we lay out a strategy for the long term, there are some things we can do right now. Today the President has asked me to announce an important enhancement of the Conservation Reserve Program. Effective immediately, we are increasing the incentives for landowners to enroll in state access programs, which should allow us in the next five years to make available seven million acres of CRP lands for hunting. (Applause.)

In addition, the President wants to build on the success of our wetlands restoration program. Just last week he committed the federal government to protecting, restoring, and improving an additional four million acres of wetlands over the next five years. (Applause.)

I'm also pleased to tell you that our administration is working to quickly finalize a memorandum of understanding with Western governors on energy exploration. Both Democrats and Republicans understand that this nation can produce more oil and gas—and we can do it in an environmentally responsible way. The President and I believe that a sound energy strategy must include opening up the Continental Shelf and the North Slope to safe, careful production. We have a responsibility to meet more of our own energy needs with American wells, American pipelines, and American refineries. The President has made this point repeatedly to the Congress. And now it's time for Congress to get off the dime and strengthen the nation's energy future.

The President is also asking Congress to strengthen and expand three important elements of our conservation policy. First, our conservation tax incentives have proven extremely effective. We should make these incentives a permanent part of the tax code, and expand them to include conservation donors who make their living in the hunting and fishing business. (Applause.)

Second, we've been impressed with the record of oil and gas pilot offices in the Bureau of Land Management ensuring our energy decisions properly account for wildlife and other conservation needs. These offices have done a fine job in bringing all the players together, getting everyone on the same page, gathering sound information, and making decisions in the public interest. That's pretty much the definition of good government—so we ought to keep those pilot offices in place.

Third, the Sporting Conservation Council, which we created in 2006, has proven itself to be an excellent source of insight and good judgment. Congress should formally authorize it for a ten-year term to help us carry out that ten-year plan. (Applause.)

In these eight years, ladies and gentlemen, we've upheld the duties of stewardship—and we've left a good example for others to follow in the years to come. By fostering a spirit of respect and cooperation across the board, we've protected wildlife and habitats, gotten the forests and parks into better shape, and helped young Americans develop their own appreciation and sense of responsibility for the land and life around us.

One person who is doing his part is a gentleman named Lowell Baier. For the past 37 years, Lowell has brought together nonprofit groups and government officials to restore wildlife habitats and preserve our rich hunting heritage. He has preserved Teddy Roosevelt's Elkhorn Ranch, and he helped lead the effort to restore the North American Wild Sheep. He knows how to—how important it is for all citizens to help safeguard our nation's wildlife and scenic beauty. Lowell says, the work of conservation "is both an honor and a duty." He's right about that—and people like him are models of upright citizenship.

For myself and for the President, let me say that we'll always appreciate the advice and friendship of so many who are here this morning. We've been honored to have you as partners in protecting our nation's natural resources. Together, we've kept our focus on the future, we've kept the right priorities, and we've made wise choices. History will be the judge—and history, I believe, will say, job well done.

Thank you very much. (Applause.)

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